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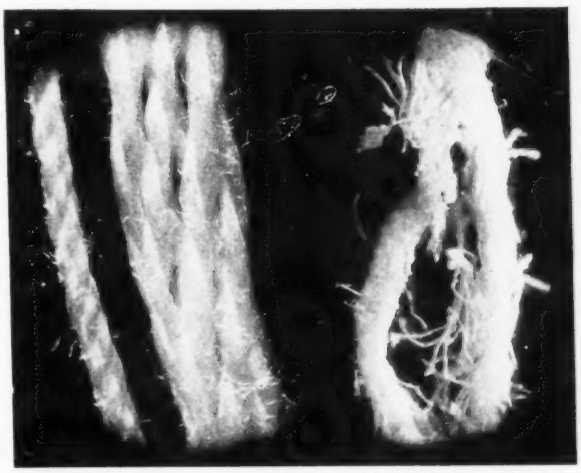

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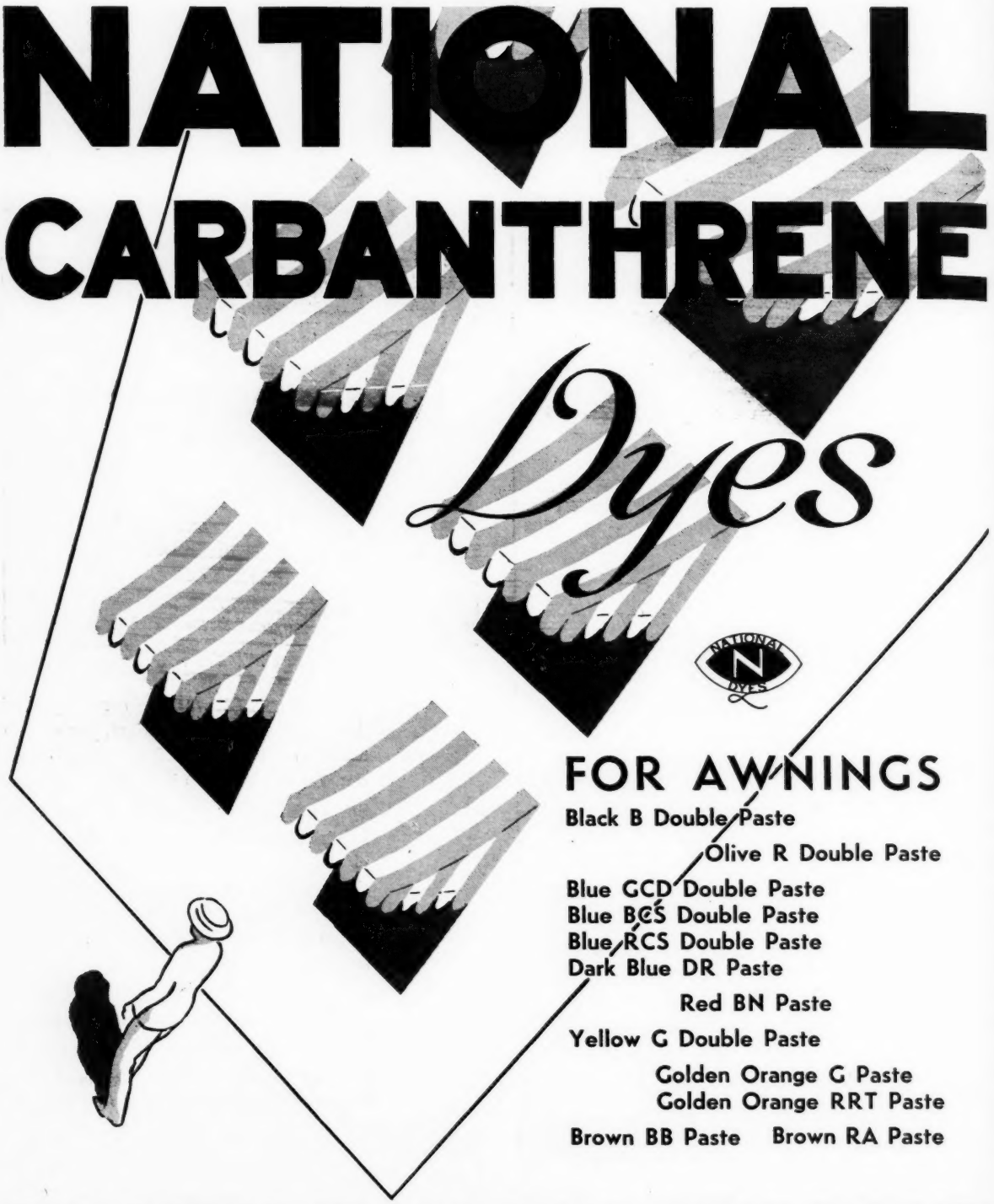

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VOLUME XX | NOVEMBER 9, 1931 | NUMBER 22

An Introductory Study of Textile Microbiology—Chapter I

By WILLIAM G. CHACE

Instructor in Chemistry and Microbiology, Lowell Textile Institute

In view of the large number of articles already purporting to give the elements of textile microbiology, it might seem that some explanation of the reasons for writing another should be given. The author has found, however, no articles which enable the textile chemist or other laboratory worker, not trained in microbiology, to learn the essentials and enough of the technique to undertake work in this field personally, either for the purpose of ascertaining the cause of a particular difficulty or to undertake research on the subject. It is in the hope of filling this gap, that the accompanying material, which is a slightly rewritten version of the lectures given to the senior textile chemists at the Lowell Textile Institute, is presented.

BEFORE the study of any condition can be taken up in detail it is necessary to be acquainted with the causes of the condition in general. The conditions known as "mildewing" and "rotting" are both the result of the growth of micro-organisms. When these organisms are of a type which causes spots readily visible to the naked eye we call it mildew. When, however, the organisms are not of this type, and affect mainly the strength of the material we call it rotting. The micro-organisms concerned in the attack on textiles are of three different types, (a) the molds, (b) the bacteria, (c) the actinomycetes of ray fungi. The organisms are named above in the order of our knowledge of their action on textile materials; most work having been done on the molds, and investigation of the action of actinomycetes having been reported only once.[1] This lack of knowledge of the actinomycetes is particularly lamentable as they appear from work in other fields to be vigorous cellulose destroyers and more resistant to drying then bacteria. It is possible, therefore, that rotting attibuted to other causes is occasionally due to this class of organisms.

Brief Description of Organisms Attacking Fibers

The Molds. The molds belong to a very large group of plants which includes the mushrooms, the mildews seen on food and fabrics, the fungi seen on rotting wood, and many producing disease in plants and animals. Fortunately the species which produce mildew in textile materials are few and do not include any dangerous disease producers. The most common fall into three groups easily distinguishable under the microscope, (a) the aspergilli, (b) the penicillia, (c) the mucors. While others are mentioned from time to time and since each new species is found by only one investigator, it seems probable that they are accidental infections and not normal mildewers. The aspergilli have the appearance shown in Figures 1a and 2. Figures 1b and 3 illustrate a penicillium and Figure 1c and 4a mucor. All these organisms reproduce in at least two ways. First they reproduce by branching and sending out shoots in all directions. These shoots are known as "mycelli." They vary in diameter from ¼ to 1/10 that of a cotton hair. Second, and most important, they reproduce by spore formation. Under proper conditions of environment, the ends of certain mycelli swell and go through a more or less complicated mechanism, according to the genus, which results in the production of a "head," bearing many round or oval bodies known as "spores." Each of these spores is capable of producing a mold growth if it falls on a favorable substratum. These spores are very small and very resistant to adverse conditions such as drying and high temperatures, hence they are the usual method of infection. They are easily blown about by a breeze, so infection often travels long distances to cause mildew in places where there previously has been none. Ordinary dust such as is constantly floating in the air contains spores of molds as can be demonstrated by exposing an agar plate to the air for a few minutes. Within a few days mold colonies will develop on the plate. These spores are often highly

colored and much of the "staining" of mildew is due to the formation of colored spores. Undyed cloth is almost never stained by mildew which does not reach the spore stage. A few of the less common species do produce a

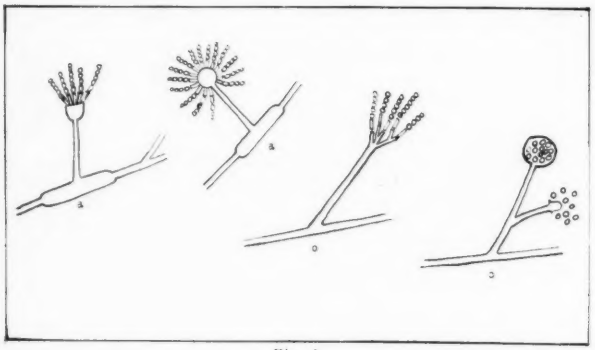

Fig. 1

pigment aside from colored spores. The common method of identification is by observing the spore heads. The characteristics of the penicillia and the aspergilli are

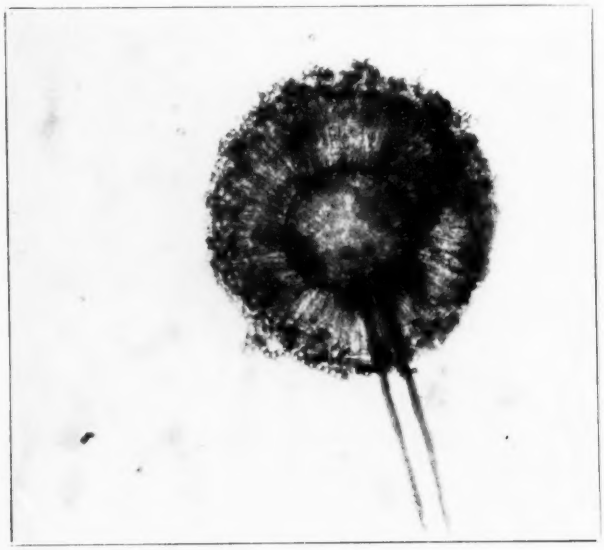

Fig. 2a
Aspergillus Head

clearly shown in the illustration. In the mucors, the spores are contained in a sack (sporangium). As this is very difficult to see under the microscope, its presence must be detected by the smooth outline of the head. (Fig. 4.)

The Bacteria. This class of organisms has, unfortunately, acquired a very bad name due to the fact that a few members of their tribe produce disease; and, as is common, a few bad specimens give many useful citizens a bad reputation. As a matter of fact, a very small percentage indeed of the bacteria produce disease in man. Most are useful and necessary to our existence. The bacteria attacking textiles are of the useful sort but their energies are misdirected. A cotton-destroying bacterium would be most useful in decomposing fallen leaves or other cellulosic debris. A wool destroyer would be desirable in soil to remove animal or insect bodies.

The bacteria are classified in several ways. First they are usually classified by shape. All the thousands of bacteria fall into three devisions according to shape. (1) Round, called "coccus"; (2) rod-shaped, called "bacterium" or "bacillus"; (3) curved, called "spirillum." These shapes are illustrated in Figures 5-8. Second they are classified by whether they grow in oxygen (aerobic), or will not grow in the presence of oxygen (anaerobic) or will grow with or without oxygen (facultative). It is fortunate for the cotton man that the most violent cellulose destroyers are anaerobic and cotton is not usually found

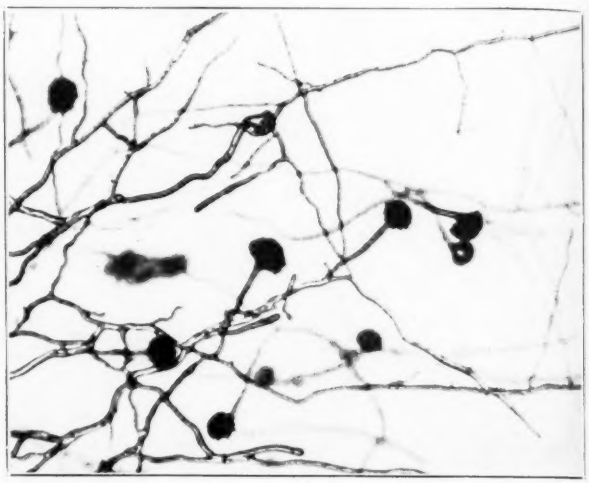

Fig. 2b
Aspergillus

in anaerobic conditions. Further, let it be stated that of the aerobic cellulose destroyers, the worst are those which do not act at room temperature, but start acting only at a much higher temperature.

Fig. 3
Penicillium

Bacteria reproduce by one means only, by dividing in half. A very important property of certain rod-shaped

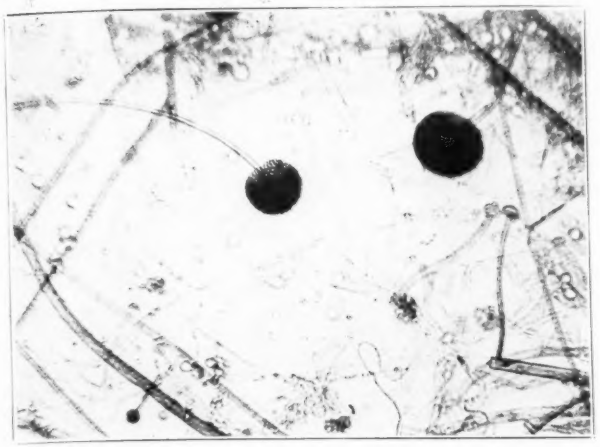

Fig. 4
Mucor

organisms is the ability to change to a protected condition known, unfortunately, as spore formation, because the early observers thought it a reproductive function like spore formation in molds. Spore formation in bacteria, however, is not a reproductive process, for a single organism never forms more than one spore and whereas re-

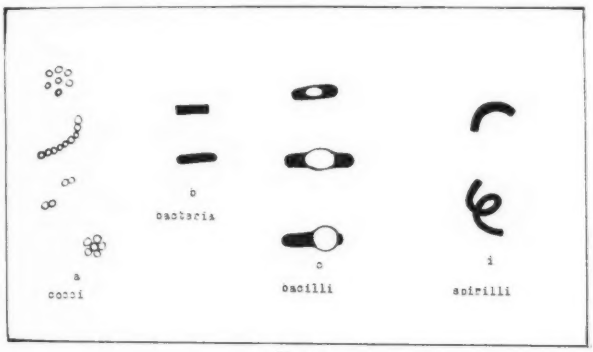

Fig. 5

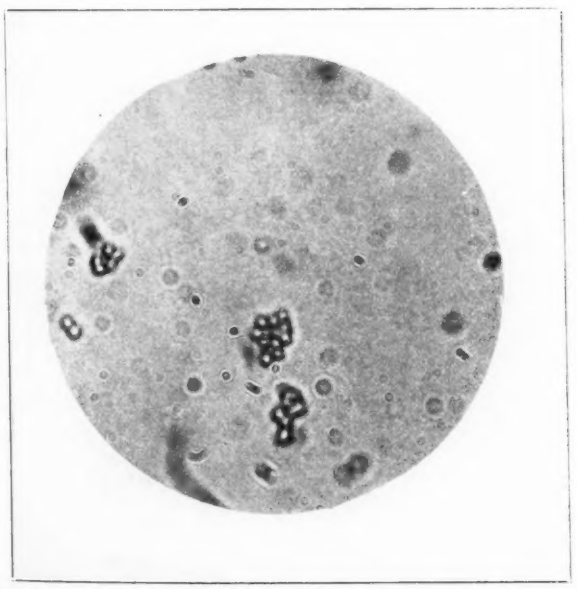

Fig. 6
Coccus

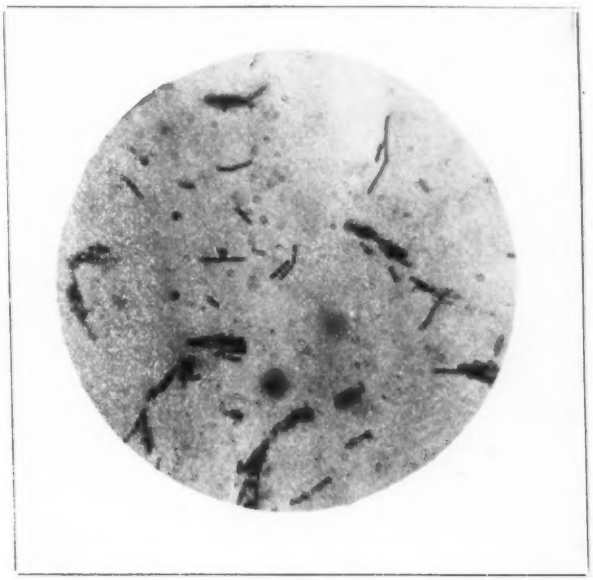

Fig. 7
Bacterium

productive activities are carried out when conditions are most favorable, spore formation in rods takes place only when the organism finds itself in an unfavorable environment. These spores are very resistant to unfavorable

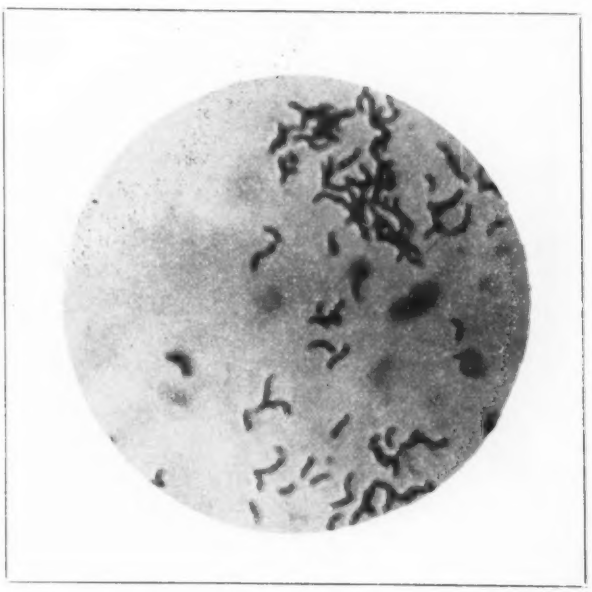

Fig. 8
Spirillium

conditions. They will stand high temperatures and years of drying, conditions which quickly kill non-sporeformers. Those rods which form spores are called "bacilli"; those

which do not are called "bacteria." This nomenclature leads to some confusion in as much as the whole are commonly called bacteria. The scientific name of the whole class is "schizomycetes."

The Actinomycetes. Workers in soil microbiology have found the actinomycetes to be active cellulose decomposers, so we may assume that they are cotton rotters. As

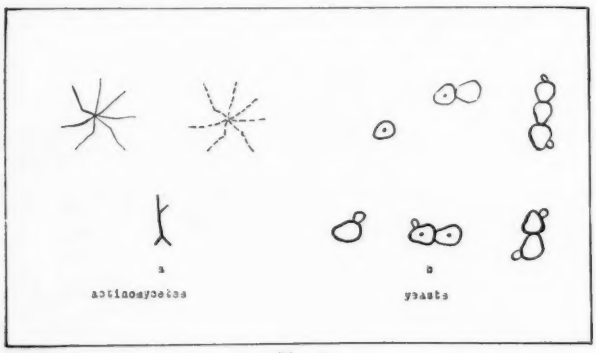

Fig. 9

stated earlier, almost no work has been published concerning the action of these organisms on textiles. This is a field which should certainly be investigated. The actinomyctes are illustrated in Figure 9a. They reproduce by dividing into many sections, each section developing into a new organism. In this respect, some have considered them to be intermediate between the bacteria and the molds.

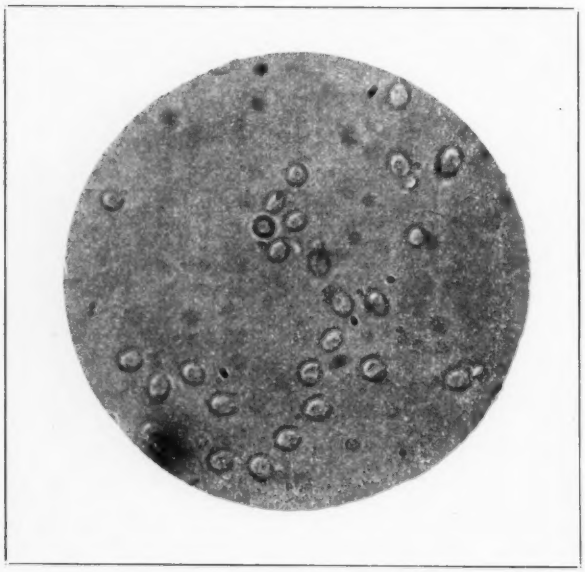

Fig. 10
Yeast

Besides the three classes of organisms mentioned above, there is a slight possibility that yeasts may play some part in fiber decomposition. Certainly these organisms are active in our size baths and find their way onto the fibres. The ability of yeasts to decompose cellulose and wool fibers is still disputed. Their appearance is illustrated in Figures 9b and 10.

For a more detailed description of the classes of plants mentioned above, the reader is referred to Henrici's[2] excellent text and to the indespensible monographs by Thom and Church[3] and Thom[5]. A shorter account of the aspergilli affecting cotton is given by Smith[5].

REFERENCES

[1]Fleming and Thaysen, Biochem. J. 14:25 (1920).
[2]Henrici, "Molds, Yeasts, and Actinomycetes," John Wiley & Sons, New York, 1930.
[3]Thom and Church, "The Aspergilli," Williams and Wilkins, Baltimore, 1926.
[4]Thom, "The Penicilla," Williams and Wilkins, Baltimore, 1930.
[5]Smith, G., J. Text. Inst. 19:T92 (1928).

China Aniline Dye Imports Through Shanghai Increase

Imports of aniline dyes into China through Shanghai increased from a value of 1,928,000 customs gold units (1 C. G. U = $0.40 United States currency) in the first six months of 1930 to 3,110,000 C. G. U. during the corresponding period of 1931. Of the 1931 six months' imports, Germany supplied a value equivalent to 2,064,652 customs gold units, according to Assistant Trade Commissioner Paul F. Kops, Shanghai.

NEW PATENTS

(*Abstracted by Synthetic Organic Chemical Mfrs. Assn.*)

New Vat Dyestuffs. (Of brilliant red tints fast to light, washing and chlorine, obtainable by condensing a hydroxythionaphthene compound with a reactive 2-derivative of a 4-methyl-5-7-diahalogen-2.3-diketodihydroxythionaphthenequinone.) Hans Heyna, of Frankfort-on-the-Main-Hochst, Ger., assignors to General Aniline Wks., Inc., of N. Y., N. Y., No. 1,822,967, September 15, 1931.

Vat Dyestuffs of the Benzanthrone Series. (For example, Bz-1, Bzl'-benzanthronyl sulphide is brominated, converted into the mono-amino compound and condensed with caustic potash and ethyl alcohol, into amino-isodibenzanthrone, dyeing cotton a bluish gray tint.) Edouard Holzapfel, Otto Braunsdorf, and Hans Lange, of Hochst-on-the-Main, Ger., assignors to General Aniline Wks., Inc., of N. Y., N. Y., No. 1,822,968, September 15, 1931.

Vat Dyestuffs of the Anthraquinone Oxazole Series. (Dyeing vegetable fiber full orange to bluish red shades of good tictorial power and fastness properties, obtainable by condensing 3.3'-dihydroxy-benzidine with anthraquinone-2-aldehyde or 1-amino-anthraquinone-2-aldehyde or halogen-substitution products thereof, etc.) George Kalischer, and Otto Bayer, of Frankfort-on-the-Main, Ger.), assignors to General Aniline Wks., Inc., of N. Y., N. Y., No. 1,822,972, September 15, 1931.

Meta-Hydroxy-Diphenylamine Compounds and Process of Making Same. (Dyestuff intermediates which comprise heating 1-methyl-2-amino-4-hydroxy benzene with an arylamine in the presence of hydrochloric acid.) Leopold Laska and Arthur Werdermann, of Offenbach-on-the-Main, Ger., assignors to General Aniline Wks., Inc., of N. Y., N. Y., No. 1,822,974, September 15, 1931.

De-Sizing in Preparation for Dyeing

Methods for Removing Starch from Woven Cotton and Rayon Fabrics

By A. J. HALL, B.Sc., F.I.C., F.T.I.

Complete and satisfactory de-sizing of cotton and rayon materials is essential to good dyeing and finishing since residual starch in these materials leads to imperfectly penetrated and often streaky dyeings and to finished fabrics having a harsh handle. The efficiency of acid, alkaline, and enzyme de-sizing agents are considered in relation to the formulation of a practical de-sizing process. A convenient method for estimating the starch in sized cotton is described.

THE properties of ordinary starch as described in the usual text-book would suggest that there would be no difficulty at all in removing this substance from textile materials to which it had been applied either for the purpose of facilitating weaving or for conferring a desired finish. Starch, whether it be obtained from wheat, rice, or sago, is described as being an inert substance which is usually water-insoluble but which can be converted into a gelatinous paste with boiling water; it is assumed to have many properties similar to cotton and other cellulosic materials. In particular, starch is nowhere described as having an affinity for a cellulosic fiber such as cotton or viscose rayon. Yet the practical dyer or bleacher finds from his experience that it is often exceedingly difficult to remove starch from textile goods.

Many instances could be given of the apparent tenacity with which starch is retained by cotton materials but two will suffice. In dyeing Aniline Black by the prussiate process cotton fabric is padded with a strongly acid oxidizing mixture usually containing hydrochloric acid and sodium chlorate, then dried, and led through a steaming chamber (duration of passage is about five minutes), it is afterwards chromed in an acid bath and washed in boiling water. It would be assumed simply from a knowledge of the properties of starch that under such conditions this substance would be hydrolyzed and rendered easily water-soluble. Yet if grey cotton fabric (containing a starch size) is dyed Aniline Black it is found that starch is present in the dyed and well-washed fabric. Again, if a cotton-viscose rayon fabric is thoroughly boiled in a jig with an alkaline soap liquor and then compared as regards stiffness of handle with a similar fabric which has received a similar treatment, but further bleached or otherwise treated such that it has been in contact with acids, then it will immediately be noticed that the fabric which has been soaped only has a much stiffer handle and this is due to the presence of starch. Both of these examples illustrate that starch or its conversion products are extremely difficult to eliminate from textile materials.

Actually, starch by itself is most easily rendered water-soluble by boiling it with an acid. It is thereby converted into dextrines and glucose which freely dissolve in cold water. But in removing starch from cotton and rayon materials it is not generally desirable to use an acid treatment since under such conditions the cellulose of the cotton or rayon is liable to be tendered and have its dyeing properties changed. So that the desizing of cellulosic goods (practically all sizes contain starch as a main constituent) must in general be carried out under neutral or alkaline conditions.

Fabrics which consist entirely of cotton are satisfactorily desized by the usual kiering process followed by bleaching with an hypochlorite; this process removes starch sizes completely. But cotton goods containing rayon, particularly viscose and cuprammonium rayons, should not be kiered unless this process cannot be avoided for other reasons; kiering often has an adverse effect on the handle of the rayon materials. So that the complete removal of starch from cotton-rayon goods is not so easy as would at first be considered.

Many bleachers and dyers, it is believed, do not appreciate fully all the care and attention that is necessary to remove starch from the goods they handle, although as will be referred to later, much difficulty and bad work in dyeing can be traced to inefficient de-sizing. For this reason it is useful to draw attention to some recent researches which have been carried out by M. M. Tschilikin (Textilber., 1931, *12*, 29) on the removal of starch from cellulosic material by various methods; the results obtained are extremely interesting.

Preliminary Experiments

In some preliminary experiments cotton fabric sized to the extent of about 5% by weight was subjected to various de-sizing treatments and the loss of weight determined; the presence of starch was also ascertained by means of the usual iodine test. Thus, after boiling with water at 30° C. for 14 hours a 4.3% loss of weight occurred but

the resulting fabric clearly showed the presence of starch by the iodine test. Treatment for 13 hours in the cold with a solution of naphthalene sulphonic acid (8 grams per litre) resulted in a loss of weight of only 3.4% while similar treatment with the sodium salt of the sulphonic acid gave a loss of 3.07%, starch being left in the fabric after both treatments.

Caustic soda is known to have a rapid gelatinizing action on starches even in the cold, so that it is surprising to notice that the fabric lost only 3.06% in weight when immersed in a 0.4% solution of this alkali for 14 hours at 20° C. and that residual starch was shown to be present. Even when the treatment was carried out at a higher temperature and the alkali-impregnated fabric treated with moist steam so that the loss of weight was as high as 5.05%, it could be shown that not all the starch was removed.

The most complete removal of starch in these preliminary experiments appeared to be obtained by steeping for 9½ hours in a solution of Diastafor initially at 50° C.; the weight loss was 5.37% and only slight traces of residual starch could be detected.

In subsequent more exact investigations the hydrolysis (solubilizing) of starch by enzymes, acids, and alkalis was studied both with and apart from fabric. The effect of these hydrolysis methods on cellulosic fibers themselves was also examined.

Results of Experiments

Generally it was found that treatment of cotton with 1.7% or 2% hydrochloric acid at 50° C. for fifteen minutes exerted no appreciable destructive action, but the results of the various experiments along these lines are so useful, since at some time or other every bleacher is obliged to treat cotton goods with a cold or hot sour (acid), that they are given here:

Acid	*Concentration*	*Duration of Treatment*	*Temperature*	*Per Cent Cellulose composed*
Hydrochloric	3.0%	15 mins.	100° C.	1.24
	2.0	15 mins.	100° C.	0.86
	1.0	15 mins.	100° C.	0.44
	0.5	15 mins.	100° C.	0.33
	2.0	15 mins.	50° C.	....
Sulphuric	1.7	15 mins.	100° C.	0.29
	1.2	15 mins.	100° C.	0.26
	0.95	15 mins.	100° C.	0.25
	0.7	15 mins.	100° C.	0.19
	0.45	15 mins.	100° C.	0.15
	1.7	15 mins.	50° C.	0.07
	0.95	15 mins.	50° C.	....

In a hot sour it appears that hydrochloric acid attacks cotton considerably more than does sulphuric acid of the same concentration, but when souring is effected warm then hydrochloric is less destructive than sulphuric acid. These facts allow the bleacher to make a useful choice between the two acids according to the temperature of the souring treatment which is necessary.

Removal from Cotton Fabrics

Returning now to the removal of starch size from cotton fabrics, Tschilikin prepared cotton sized to a known extent with potato starch, pastes liquefid with (A) dilute sulphuric acid, (B) a hypochlorite, and (C) Biolase—a starch liquefying enzyme, and then subjected these to the action of various desizing treatments, the loss of starch by the cotton being determined with the following results:—

Desizing Treatments:

1. Steeping in cold water for 24 hours and then washing.
2. Steeping in cold sulphuric acid (1° Bé.) overnight and then washing.
3. Immersing for ½ minute in sulphuric acid (¾° Bé.) at 50° C. then allowed to lie for 2 minutes and washing.
4. Immersing for ½ minute in 0.45% caustic soda solution at 45° C. then allowing to lie for 2 minutes and washing.

Desizing Results:

Loss of Starch

Treatment	*Size A*	*Size B*	*Size C*
1.	25.8%	25.1%	23.6%
2.	29.6	22.2	40.4
3.	24.5	13.7	38.5
4.	44.1	40.4	63.5

The above results at once show that cold and even hot treatment with sulphuric acid has only a moderate desizing action, and in fact the amount of size removed by cold acid is only slightly greater than is removed by water alone; caustic soda is much more effective as a desizing agent.

It is also to be noticed that a size prepared by means of a starch-liquefying enzyme is more easily removed from sized cotton than one prepared with starch liquefied by other means (for example, acid or hypochlorite).

Some confirmatory results were obtained by comparing the action of acids and enzyme products on starch size quite apart from cotton yarn and these are shown below:

Desizing Treatment	*Temperature*	*Starch Decomposed*
Diaphorin for 60 mins.	25 C.	33.87%
Biolase for 30 mins.	30 C.	9.0
3% Sulphuric acid for 15 mins..	100 C.	26.78
3% Sulphuric acid for 30 mins..	100 C.	49.39

In order to decompose up to 50% of the starch in the size it is apparently necessary to boil it with 3% sulphuric acid for half an hour. This is a very drastic treatment and sufficient to tender cotton if applied to fabric. On the other hand, 33% of the starch may be decomposed by low-temperature treatment with an enzyme product such as Diaphorin and in this treatment there is not the slightest possibility of the cotton being deleteriously affected.

Importance of Desizing

As previously mentioned the correct desizing of cotton and rayon goods is of the greatest importance because

(*Continued on page 735*)

Proceedings of the American Association of Textile Chemists and Colorists

The American Association of Textile Chemists and Colorists

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Oriental Silk Printing Co., Paterson, N. J.

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ANNUAL MEETING NEWS

PROGRAM
FRIDAY, DECEMBER 4th

1:30 P. M. 76th Council Meeting.
2:30 P. M. 69th Research Committee Meeting.
Sight Seeing Trips during the Afternoon.
6:30 P. M. Buffet Supper.
7:30 P. M. Informal Technical Session, Open Forum and Entertainment.

SPECIAL FEATURE

Tests for Color Blindness:
Dr. E. M. Smith, Arlington Mills.
A Questionnaire on Some Practical Problems of Wool Dyeing:
Prepared by Mr. John G. Masson, of the Rosemont Mill, and Answered by Dr. E. W. Pierce, of the Ciba Company.
Moving Pictures of Expedition to Venezuela:
Mr. Carlton S. Francis, Jr.
Celanese Corporation of America.
Other Entertainment.
Note:—It is planned to make the Friday Evening Session very informal. It is hoped that small groups may be formed to discuss mutually interesting topics.

PROGRAM
SATURDAY, DECEMBER 5th

10:00 A. M. The use of Hydrogen Peroxide and Sodium Perborate as Oxidizing Agents for Vat and Sulphur Colors.
Mr. Peter De Leeuw,
Roessler & Hasslacher Chemical Company.
10:30 A. M. The Mechanism of the Dyeing Process.
Dr. Robert E. Rose,
E. I. du Pont de Nemours & Co., Inc.
11:30 A. M. Cotton Fiber Quality: Its Measurement in Relation to Standardization and Utilization.
Miss Dorothy Nickerson,
Bureau of Agricultural Economics,
U. S. Department of Agriculture.
11:30 A. M. Some General Considerations on the Application of Electrometric Measurements.
Dr. W. N. Greer,
Leeds & Northrup Company.
12:00 Noon. Business Meeting.
Reports of Officers.
Reports of Committees.
Election of Officers for 1932.
Any Other Business.
1:00 P. M. Recess for Luncheon.
2:00 P. M. Basic Mordants and Lakes.
Prof. Wilder D. Bancroft,
Cornell University.
2:45 P. M. The Microscope and Fundamental Textile Research.
Prof. E. R. Schwarz,
Massachusetts Institute of Technology.
3:15 P. M. The Iso-Electric Point of Wool.
Dr. Milton Harris,
Research Associate of A. A. T. C. C.
3:45 P. M. A Study of Stress-Strain Curve of Rayon.
Dr. Henry Green,
Tubize Chatillon Corporation.
4:15 P. M. Suggestions for Standardizing Sulphonated Oil Analysis.
Prof. A. H. Grimshaw,
North Carolina State College.
4:45 P. M. Two New Scouring Agents.
Dr. H. Meyer,
General Dyestuffs Corporation.
6:30 P. M. Banquet.
Toastmaster—H. D. Grimes,
Chairman Northern New England Section.
Speakers—Hon. James M. Curley, Mayor of Boston.
Bill Cunningham, Sports Editor Boston Post.
And others of National Prominence.

OCTOBER MEETING, NEW YORK SECTION

THE October Meeting of the New York Section of the American Association of Textile Chemists and Colorists convened Friday evening, October 23rd, at eight twenty-five o'clock, at the Chemists' Club, 52 East 41st Street, New York, Henry F. Herrmann, Vice-Chairman, presiding as Chairman.

Chairman Herrmann: I am sorry that our Chairman, Mr. Gaede, isn't here tonight but he asked to be excused on account of pressing personal business.

. . . Following the regular routine business, the meeting was addressed by Mr. Philip Abbe, representing the Emergency Unemployment Relief Committee, who asked for cooperation in the way of contributions for the fund being raised for the unemployed . . .

Chairman Herrmann: Apropos of our program, Mr. Freedman handed me a letter a little while ago. I really haven't had time to read it. Is it all right to read it, Mr. Freedman?

Mr. Freedman: Sure.

Chairman Herrmann: It is on the letterhead of the American Home Economics Association and is addressed to Mr. Freedman.

. . . Read letter from American Home Economics Association . . .

Chairman Herrmann: Gentlemen, it almost seems to be fate that all the signposts point in one direction—the request on the part of the Emergency Unemployment Relief Committee to have a representative come here and tell us about the hard times that others are suffering, and letters of this sort which clearly point the way out of difficulty and to prosperity.

Some of you may ask, "What concern is this of an association such as ours?" Weren't we much happier in the olden days when we would all sit together and talk about whether it was better to add soda ash or trisodium ash to a bath, and what was the best amount of tin to put on silk, and whether such-and-such a vat dye was really suitable for printing or not?

I believe recent developments have shown that our Association is being forced into a larger scope of activity than this. We are not only technical men, we are a cross-section of the textile industry. As such we must face not only the examiner of our goods, that is, the examiner who is in our own employ, the person who looks at the goods and says, "I pronounce this piece all right. Let it go." There is another examiner that we are facing and that examiner is the buyer who is going to retail our merchandise. And there is still another, the examiner that it is so difficult for us to portray in our minds, yet he is the final examiner that we are working for, and that is the ultimate consumer.

I believe therefore that at a time like this we can do no better than to stop in our ordinary daily routine and try to find out what it is that the market wants, and it is for that purpose that our Program Committee has struggled so hard to bring us face to face with our buyers, with our consumers, and our critics, and the words that come to us from these gentlemen I think should carry a very valuable message. If we are privileged to listen to them here then, on the other hand, it is our privilege to face them and tell them what we think. If we think the buyer is unjust in what he expects at a price, what is the use of grumbling in our dyehouse or in our color shop or in our office? We can't do anything about it there. Let's come here—we have some of those gentlemen here—and let's thrash it out. Eventually we will get back to our technical programs. Just now times are so critical that I am strongly of the belief we can well afford to leave our immediate technical problems and think a little of our business in general, of prosperity, and above all, as I say, of our ultimate consumer.

We will turn now to the first item on our program which is the address of the Technical Director of Consumers Research, Inc., and it becomes my great pleasure to introduce to you Mr. F. J. Schlink. (Applause.)

Consumers' Problems

By F. J. SCHLINK

Technical Director, Consumer's Research, Inc.

MR. CHAIRMAN, Ladies, and Gentlemen: I am going to talk rather about the consumer's problem than about his organization because if you will understand the problem of the ultimate consumer a little better it won't be necessary for you to be concerned about the operations of this new organization called Consumers Research.

I may say about it, however, that it is a non-profit advice and counsel-giving organization which serves only ultimate consumers. It takes no money from any one except twenty-five thousand individual subscribers (not corporations, not libraries), at the rate of two dollars a year, and for that it gives them a service consisting of a series of bulletins and a sort of handbook to the market,

a guide for the buyer; it takes a critical and investigative attitude toward things which it advises you about.

Roughly, it advises you about anything which it can find out, about anything that you buy from insurance to razor blades.

As you can imagine, it is a large enterprise and very much cannot be done with $50,000 a year. But the membership is growing rapidly and we expect that we will have a hundred thousand, perhaps half a million, subscribers within a few years. We may have a hundred thousand by the end of a year from now.

The first question is, "Why do you need the consumer's point of view in the present economic situation?"

Well, there is a growing feeling on the part of consumers that they have been pretty well done out of a lot of money in the past and when the depression came along our subscription list multiplied by leaps and bounds. We had no idea there were so many people that were mad about what had happened to them in the last three or four years. The old theory was that when you were gypped you went out and earned a lot more money—so that you might be more easily gypped the next time, because you didn't care. The present theory is you aren't going to earn any more money—you may earn a lot less in fact—therefore it is better to try to make your money go as far as possible.

That is a definite point of view on the part of a good many millions of Americans as this time. Mr. Collins and others have pointed out to you that business has overdone its stuff, that it has sold too many people too poor products and that now the golden goose has been somewhat impaired if not injured for quite awhile.

I must make good on that statement by telling you what I know about some things and how bad they are.

Refrigerators are a simple illustration. You may have heard of this before. At least eighty per cent of the refrigerators on the market—I mean of the icebox type—would be an economy if they were thrown into the alley because they use their value out every year in ice and spoiled food. If good iceboxes had been made there would not now be a thriving electric refrigerator industry, because there are plenty of reasons why the family of small income might do better to buy a good icebox (if there were any) instead of spending two or three hundred dollars for an electric refrigerator. There is an industry which just about saw itself cleaned out because of the ideas it had up to the time that the more intelligent and the more engineering type of mind came in with the automatic refrigerator. It just made packing boxes with hardware and varnish on it, practically speaking. That is about the sort of thing that went into the average icebox.

You have heard about blankets lately, too.

The National Retail Dry Goods Association after about three or four years of agitation on the part of consumers and others has decided that maybe something ought to be done about the misrepresentation on blankets. It may be done but if it is it will be because enough consumers were irritated by the thing so that people like Miss Swayne whose letter you have heard read and others made their voices heard and department store owners and merchandise managers heard irritated people ask, "If this is a part wool blanket why doesn't the label say how much wool it contains?"

You all know I think that the average amount of wool in a so-called "part wool" blanket was so trifling that it might just as well have been left out.

I heard a blanket manufacturer say that the people simple had to be deceived in these matters. He said his own daughter who was living in humble circumstances because she had married unfortunately had these part wool blankets and it would hurt him terribly to explain to her that there was only four per cent of wool in the blankets she had, because it would destroy her pride in her possessions.

I have bought shirts from one of the leading American shirt-makers, of which the collar became one color and the body of the shirt another color after a single washing. I unfortunately plunged: I bought six of these shirts and I have been trying to hide my shame ever since. (Laughter.) Those shirts were sold as "firsts" and so far as I knew they were first-grade. I suspected shortly after their purchase that they were not first-grade and that the manufacturer knew perfectly well I was going to be sore about those collars in a week.

Consumers Research have tested recently seven of these little drink mixers which you use for making malted milk in the home—or you can use them for other drinks. We expected to find one or two out of the seven that were some good. There wasn't a single one of the seven that was any good and the prices ranged all the way from four dollars or so up to twenty-nine fifty. There wasn't one of them that was a decent piece of engineering work. Two of them were so bad that they failed completely in two hours of running and four hours of running, respectively. They just quit. And we calculated that of the two highest-priced ones, one cost seven cents for every five minutes you ran it and the other cost fifty-six cents for every five minutes you ran it. (Laughter.)

Those are nationally advertised articles approved by magazine institutes, sold by our best department stores and they are typical of the market in that appliance. We shopped carefully to be sure we had a representative run of that market's products.

I bought a brief-case at one of New York's largest department stores which was marked "Genuine Cowhide." When I got home I discovered that the gussets were made of cloth and enameled, so that it was a very "cheesy" construction not fit to be carried for more than a month or so because the cloth gussets would rapidly wear through when you placed it beside you on a train. I had a great

deal of difficulty getting that store to pay the slightest attention to my complaint. They said the part that was marked "Genuine Cowhide" was genuine cowhide and wanted to know what I was kicking about.

Well, I kicked, and because I was more or less an irritated consumer I got my money back but the average man would have given up before I did—it took several letters—and he would have cherished a grude not only against that department store but against everything that any department store offers as a bargain at a special price.

I am always getting "stuck" on neckties, which is something you gentlemen know more about than I. They are always either too short or they acquire a permanent twist after the first tying, or something of that kind. (Laughter.) And it seems odd to me that stores of high reputation should make it their policy to pare off an extra inch or two in the length of a necktie, and substitute an imitation biased lining for a real biased lining, and things of that kind.

If you fellows and the department stores think that consumers want that sort of thing you will find that consumers in general will simply quit buying.

An economist writing in "The New Republic" two weeks ago said that, unlike the manufacturer, the consumer can only express his discontent by one method. You can change your supplier. You can reduce your purchases from a particular supplier and gradually shift to another, but the consumer's only way is, "Yes," or "No." He either buys or he doesn't. When he is in a position where the financial situation is bad and the goods are bad, he has only one vote, and he casts that all the way or not at all, and it may be, this economist says, that is why we now have this buyers' strike. Instead of having a gradual tapering off of demand we have had a sudden realization that things aren't what they ought to be and maybe the thing to do is to sit tight, put our money in the bank and wait until we see what happens.

We have tested a great many things. We have tested more things with this $50,000 a year than all of the department stores in the United States have tested, or reported to their members. That is an extraordinary thing because when 25,000 people can shell out two dollars apiece and get the reports that they have on everything, from jam to canned peaches and razor blades, it shows what could be done by an industry which took this problem of quality seriously.

Mr. Lew Hahn, formerly of the National Retail Dry Goods Association, at one time urged that they should collect a million dollars (which would have been one-thirtieth of one per cent of the annual income of that trade at that time) and spend it in finding out more about goods and disseminating that information freely to all its members.

We tested three kinds of well-known preserves. We found to our surprise—we are being surprised ourselves all the time on how much these differences can mean—that the highest priced one which cost three times as much as the cheapest one was decidedly inferior to the cheapest one.

In the state of North Dakota they found the same thing in connection with peanut butter. They found the difference in quality between the cheapest and best was very slight and the two highest priced, nationally known brands were both short weight, which seems to me to be a funny thing to do for a man who wishes to maintain national prestige.

We tested vacuum cleaners, the first test that has ever been made and published about vacuum cleaners in the history of the industry so far as we can discover, which is again an extraordinary fact. There have been plenty of private tests made for power companies, for electric central stations, for individual manufacturers, who then carefully twisted the data around so as to make their vacuum cleaner the best and all the others very bad. You have seen those tests often I am sure but this is the first time anyone started out not knowing or caring what the answer was going to be and then reported everything that was found.

This is what we found: that there were two very high priced ones on the market. One of these we found was very good. One of them was just as bad as possible. They both sold for eighty dollars. We found that one which cost twenty-nine dollars was as good as one eighty dollar one and much better than the other eighty dollar one. We found that one manufacturer sold two. One he sold for forty-eight dollars and the other for twenty-eight, and the forty-eight dollar one was definitely inferior to the twenty-eight dollar one, and he didn't know it. Apparently he had never made the test himself. He knows it now and he is going to change the vacuum cleaner to bring about a different situation. (Laughter.)

We have money to spend for testing stockings. Women's stockings we recognize are a very important article of purchase but the trade—the manufacturers, the retailers, etc.—have never joined intellects to develop a specification or a method of test on the basis of which anybody could honestly evaluate stockings. I have interviewed department store buyers and owners of stocking factories, and people of that kind, and they all say, "Oh, yes, I can tell a good stocking."

Then you say, "Just how would you go about it?"

"Well," they say, "I can't tell you exactly."

It always comes out that they have a feeling for a good stocking. Well, would you select the one that this other man has a feeling for? No, you wouldn't select that.

It seems to me in a situation of that kind it is fairly obvious that not even the beginning of learning has taken place, that as long as experts, so to speak, in any field do not agree on even the simplest fundamentals of their

product there isn't any information that it is worth going out to look for.

We are going to send samples of American stockings to a foreign country in order to have them tested because in Europe there is an organization which has studied that matter. I frankly confess they don't make as good stockings in Europe as we do here. The reason they don't is because the people can't buy them. But they know more about how to make them in Europe than we do in this country.

Nobody can get anywhere in this matter of testing goods without making a beginning at standards. They can't be private standards. They have to be standards which men—representative, impartial, and disinterested men—can get together and agree upon.

The American Standards Association and the Home Economists have tried vainly to get manufacturers to agree upon standards with the consumer, not all by themselves, but bringing the fact out where everybody can look at them, on sheets, on blankets, on silk weighting, methods of expressing it, and methods of determining it, and nothing has come out of it. There have been innumerable conferences but it always turns out that each man feels that perhaps he would be better off if the situation were left just the way it is. And in one case (in the case of one of these textiles) I happen to know that the vice-president of one of the largest department stores in America turned thumbs down on the proposal merely to tell the truth about the product, not to change it, but just to label it so you could find out whether it was this or that. He felt that it would be a fine thing for his store to buy stuff that way but it would be a very bad thing if it sold it that way.

The general attitude of the consumer in looking at these problems is coming to be—and I don't speak for myself but for a good many thousands who write in and tell us how they feel about these matters—not that he wants better goods specifically, but that he wants to have the goods more fairly represented. The consumers do ask that a manufacturer shall know whether they are good or not, which as I have explained to you he usually doesn't and in thousands of lines he has never even tested his product properly.

Nobody who worked for an icebox factory ever tested an icebox. It was college professors at Columbia, Illinois, and places like that who tested iceboxes, and then years afterwards the manufacturers of iceboxes thought it might be an interesting thing to have some tested so they arranged for a bureau which does some work of that type now.

But this isn't an exceptional situation. Razor blades are in the same position as you all know possibly. It is largely a matter of guess whether you get a good one or a bad one and we found, to our surprise, that after we located a good one, a month or two later it wasn't good any more, and we had to start all over. (Laughter.)

We have actually arranged in that case to send razor blades abroad because a foreigner has developed an objective method of testing them.

There again this standard method of test comes up. This man has developed an objective method of testing by which he can determine, without anybody's private opinion being involved at all, which is the sharpest blade and which holds its edge the longest. Those are the two things you want to know.

A great many manufacturers and purchasing agents are members of our organization as individuals, not as manufacturers but as consumers, not I think because it does them a great deal of good but because of the fact that we are completely disinterested. We don't care as I say how it comes out. And we have also tested a great many things that nobody else ever thought should be tested or could be tested.

There are several things peculiar about this which I think ought to be tried by industry for its own purposes as consumers are trying it for theirs.

First, nobody pays in any way at all for any of the findings. We take no advertising and never will take any advertising. We don't have to collect large sums from patrons and then say things that will please them, and so we don't care whether a particular individual among these 25,000 gets mad about something or not because we can spare his two dollars, which is the way to be, and that is the only way you should be if you are conducting scientific work.

Another thing which is peculiar about us, which I don't think applies to any commercial organization, is that we do care a lot about cost, and that doesn't mean first cost. It is the last cost that we are concerned with.

On these drink mixers it so happens that the most expensive ones were among the worst, and the very cheap one lasted two hundred hours of running time whereas the high priced ones ran two hours and four hours respectively. We would be fools to recommend that you buy a high priced one in that case. But in other cases, where the high priced goods are better, we unhesitatingly advise the consumer to spend his money for the high priced article and get something that will last. That is certainly true in the case of refrigerators, where one should pay probably seventy-five dollars for a decent refrigerator and get very good dividends on his investment.

On clothing, lots of Americans are buying foreign-made woolens because the American woolen trade has been conducted pretty largely on a basis of maximum turnover. I was asked one time by a department store if I could find them some specifications for men's suits. I said surely I could, I could get them from a Canadian firm that buys on specifications. No, they said, that wouldn't do; Canadians are too much like the English; they like their suits to last as long as possible and that is not the way we do things in America.

When I want a heavy suit I buy Harris tweed and it costs a lot of money but the cost per year or the cost per mile, as you might say, is very reasonable, and I am willing to spent a lot more money for a suit than I am accustomed to spending for most things because I feel that I am getting something for my money.

The average consumer is probably in the same position. He would pay the price you asked if he knew that he would get something in return and not just some good advertising copy that said the product was better.

We try to teach people to be rational. We are trying to discourage them from becoming excited about a ninety-eight cents price, when the product was really marked up from ninety-five, and we are trying to get them to see behind the sales argument and look for labels and things of that kind.

It is getting to be true that the customary sales tactics, the use of paid testimonials and things of that kind, are pretty largely a waste of money, because so many eminent scientists have lent their names to out-and-out frauds in the last two or three years, all the way from toothpastes to vacuum cleaners. I know of a case where a college professor urged the use of a certain vacuum cleaner because you wouldn't be so likely to get tuberculosis if you used it. At least he is reported to have said that by the company that sells that vacuum cleaner.

That sort of thing has broken down the public's faith in the work of technical men, and it is my opinion that if a trade association or a professional society wishes its standards to be adhered to and believed in it should go through the process of guaranteeing that those standards represent not a partisan interest but the disinterested result of the work of men who look at the problem from all sides.

All of this work on blankets, sheets, and silk weighting that came up under the Standards Association went bad on one count alone. That was the selfish interest of the manufacturer, who would rather see things left as they are, even though the industry as a whole might suffer, than participate in an enterprise which would bring light to bear upon the whole situation and improve the product. He always blamed the consumer for the bad product. He said the consumer insisted on buying cheap merchandise. He had no right to say that. You don't know what the consumer wants. You have never asked him. The home economists have. They have done so on a large enough scale so that I think considerable weight should be given to it. I refer to their study of silk weighting in dresses.

A woman went out to buy fifty silk dresses. Most of you probably know all about this. Twenty-three clerks stated positively that the fabrics in those dresses contained no weighting, whereas actually all but three of the fifty samples bought contained weighting. Forty-seven out of fifty were weighted but twenty-three were sold as unweighted.

It is just not fair to the customer, the consumer, who would of course prefer to buy a cheap product, to be lied to about the quality of the product which she is offered. It just doesn't make sense.

The leaders of the department store trade complain about the great loss due to returned goods. I don't see why a woman shouldn't return a misrepresented silk dress, if she finds out that it isn't silk. I don't see why half of these fifty dresses shouldn't have come back. But you know very well that at the most only about five per cent come back, at least for good cause. The others came back for reasons which had nothing to do with the low quality.

One of these pure silk dresses was one hundred per cent rayon. (Laughter) All but two of the forty-seven were less than one-half silk; that means they contained fifty per cent or more of weighting.

In the face of this situation members of the silk industry have ventured to suggest that the consumer is getting the kind of silk that she wants, and, secondly, that there isn't very much weighting in silks, and, thirdly, that the weighting doesn't hurt silks very much, anyway. There are fourth and fifth reasons but I can't remember them just now.

The silk trade is one that I know less about probably than anybody but I do know these facts about the quality dresses the market affords. I may say that these fifty dresses ranged all the way up to fifty dollars in price. They were carefully arranged on a scale of prices so that the market was actually sampled and the money for that work should have come from men who are interested in helping the consumer get more product for his money. It actually came from a philanthropist. It seems to me that, as a matter of simple business expediency, it would have been better for the industry to make such an investigation rather than have it made by people who have so little to spend on that sort of thing.

I think there is very little more that needs to be said. I should be very glad to answer questions if you have any but perhaps I have already run over my time. I will leave that to the chairman.

Discussion

Mr. Barber: Mr. Chairman, first, I want to invite every member and guest here to come to Paterson to the next meeting because we are going to have a wonderful exhibition there of machinery and dyeing apparatus. It will be worth your while to come out to see that, in addition to hearing the papers that will be presented at the meeting proper. Please come and bring your friends with you. As I say it will be worth your while. It isn't a Paterson thing. It is a national thing. We are trying to stimulate a start upwards rather than downwards.

The next thing I want to say is this: I don't know whether Mr. Schlink remembers me, but about three years ago he had occasion to come to Paterson and discuss this weighting problem.

You will be surprised when I tell you that fully seventy per cent of the silk merchandise to-day is about one hundred thirteen parts tin and its allied substances and seventy-five per cent silk fiber.

I don't object to the weighting if they will let the ultimate consumer know what he is buying.

My own daughter went out and paid a good price for an undergarment. The first time she washed it, it fell apart. When she brought that home I said to her, "Edith, that is full of tin. I can tell by the feel of it."

That is an absolute fact, gentlemen. All we ask is that you mark your goods. That is all we want you to do. We want to know what we are buying and what we are paying for.

I am fully in sympathy with the organization Mr. Schlink represents. I believe the people ought to know what they are paying their money for.

Chairman Herrmann: Before going any further I would just like to amplify what Mr. Barber said about the next meeting which I omitted mentioning before.

. . . Announcement with reference to the November meeting to be held at Paterson . . .

Chairman Herrmann: If there is any further discussion or if there are any questions you would like to ask Mr. Schlink this is the time to do so.

I think the subject that Mr. Schlink has presented is a very interesting one and we should look upon it particularly from the constructive side. At times the arraignment of nationally advertised articles seems rather startling but there is a constructive side to it that will benefit all of us, and any of us who have merchandise to sell are interested in this sort of thing. Possibly some of us have had merchandise analyzed by this bureau, and would like to ask about it. Or possibly they have other questions they would like to ask. Questions are invited from anybody.

Mr. Walter E. Hadley: It seems to me that the program must be quite ambitious, to say the least. I was wondering about the technique employed, on any one of the number of articles which you mentioned. Take razor blades, for instance. How would you go about determining which was the best razor blade on the American market?

Mr. Schlink: We have sent sample blades to this foreign country, to an internationally known metallurgist who has invented the first standard method for testing the sharpness of an edge. We have sent him a sample of practically every widely known blade in America. We spent forty dollars buying razor blades. I never saw so many in my life before. We sent those through the Customs Officer of his country as samples for test and he is determining for us, free of charge, the relative ratings of all those blades, including hollow ground blades of the old-fashioned star type—

Mr. Hadley: Is that a metallurgical test, or a chemical test?

Mr. Schlink: No, it is not a chemical test. It is a test to test the sharpness of the razor. He has a device which determines the number of pieces of paper that would be cut by the razor at a known pressure in a given number of strokes—

Mr. Hadley: That would isolate individual blades?

Mr. Schlink: Yes.

Mr. Hadley: I have heard that in certain standard blades that have been used by certain people they will find one or two out of a dozen that are not as sharp as the others.

Mr. Schlink: We sent so many of each that he can get a fair rating. We took samples in such a way that we crossed shipments. In other words, there were three taken out of each package, so as to make up nine altogether of each make. We took them from the stock of one of the largest dealers in the country. So we got a good sampling.

Mr. Wm. A. Kingman: That test would be all right if beards were made of paper but since they are not I should think that that test would be a rather poor one for razor blades.

Mr. Schlink: All scientific work requires you to accept some standard method of test. There is no way of standardizing people's beards and so you must adopt a standard substance which may not be like a beard but nevertheless will place the razors in the order of merit which they should have, even though that order has nothing precisely to do with whiskers. (Laughter) It is a workable system and the sharpest blade that cuts the most sheets of paper will also cut the most whiskers.

Mr. Hadley: My clothes are wearing out, I am sorry to say. I used to have quite a number of suits but my stock is becoming depleted now. I wonder where these Harris tweeds come from that you mentioned.

Mr. Schlink: They come from the Island of Harris off the coast of England. It is one of the small islands.

Mr. Hadley: I wonder if perhaps it isn't an open question if it wouldn't improve American business if we purchased American-made goods and had our materials examined by American metallurgists and American chemists. I offer that only as a suggestion.

Mr. Schlink: That is a very fair question and I should say that if one were a manufacturer that is the way it would appear to him, but if one is a consumer it is right and proper, I think, that he should be able to buy goods in those markets where he can get the best and the most for his money. That is what tariffs are for—to adjust that difference so consumers won't go abroad. And if a man will buy English woolens, in spite of a tariff of a dollar a yard, I should think that would be all right. I mean the Government is collecting the extra amount to

support the treasury and pay the doles next winter. (Laughter)

Mr. W. H. Collins: Mr. Schlink, I should like to ask this question: When you make these tests, on razor blades, for example, how are you going to disseminate this information? Are you going to say a certain trade-marked blade is better than another?

Mr. Schlink: Yes.

Mr. Collins: Do you do that with every commodity?

Mr. Schlink: Every commodity we test we give by name.

Mr. Collins: Do you rate them?

Mr. Schlink: We rate them whenever we can do so, and those that are least desirable we place in a column which shows them not recommended.

Mr. Ephraim Freedman: I would like to say we have been testing razor blades for the past four years and about two years ago we developed a test which we have been following ever since. We had recourse to an apparatus known as the Pseudo-Yarn Strength Tester, and we clamped the blade in the lower clamp of the tester. We have some standardized cord that we use. That cord is looped around the blade and then the force required to cut the cord is measured in terms of ounces, and we have found forces varied from eleven ounces up to about forty-five, that is, the force required to cut the cord.

Mr. Schlink: That sounds like a very good method.

Mr. Freedman: We also examine the blades under the microscope to discover whether there is any waving as to the blade, and any nicks. Then, the hardness of the steel itself is quite important because upon the hardness depends the life of the blade. We found some blades that had pieces of metal on the edge that looked like fish-hooks, and I am quite certain if anyone had tried to shave with a blade of that type he would have gashed himself pretty badly.

Blades are sometimes oversharp so that we have a turned edge and in such cases the cutting strength might be found to be rather low, say, nine, eleven, or twelve ounces. Yet a second test on that same portion might bring the test up a good deal higher.

Mr. Schlink: That is an interesting method of test and possibly one that will supplant our foreign metallurgist's method. I mean, it seems from the description easier to carry out.

Mr. Freedman: We will be glad to have you come down and see it.

Mr. Schlink: The method we are using now requires a special machine which cost some six hundred dollars. This foreign metallurgist is doing it free of charge, because he thought it was an interesting idea.

I should say that we don't generally send people abroad for things. We don't send them abroad unless we think the American market doesn't provide a good product, and it seems to me it is obvious that if woolen manufacturers in this country prefer to produce for a short-life suit that that is their choice and the consumer should be allowed to exercise his choice, if he wants a longer-life suit of clothes.

Mr. Thos. R. Harris: I was wondering whether your association had made any effort to find out and recommend to your subscribers what manufacturers here in America can produce good materials and what manufacturers, when it comes to making up the clothing, make good materials, and what stores will sell good materials, because I know that most of the gentlemen here would tell you that, when it comes to wearing qualities of woolen cloth, we can make cloth in this country that will outwear anything that is made in England. I know I have had American cloth made up at Arlington, Massachusetts that I couldn't wear out. I have tried it against English cloth, imported English cloth, bought at good stores in New York, which wore out three times as fast as the American cloth.

A lot of this imported stuff is just "the bunk" that the department store hands out to the American public. And, furthermore, most of the complaint we get on heavy-weighted stuff is due to the fact that the department store buyer buys down to a price and not up to a quality.

. . . Cries of "Hear, Hear!" . . .

Mr. Schlink: In the short time I had at my disposal I couldn't develop that thing properly but it is true we know a lot more about suitings than I gave you to believe we do. It is a fact, I find, that most people in the woolen trade wear imported woolens themselves, no matter whether they sell American woolens or English woolens. That is just unfortunate. It is like the shoe manufacturer whose plant I visited up in Massachusetts who never wears any of his own shoes. He has a special last not only for himself but for every one of his children. He doesn't allow any of his children to wear machine-made shoes.

All these clothing items are a difficult matter because nobody knows how to test them. I can't find anybody who will say, if I give him eight suits of clothes, he will make an objective rating of their relative value. I wish I could find such a person.

Mr. Harris: The Bureau of Standards has such a test for wearing quality.

Mr. Schlink: But they don't tell you what they find.

Mr. Harris: No, but they tell you how to test them.

Mr. Schlink: We recognize the desirability of finding such a manufacturer as you mentioned, and if he or anyone else can prove to me that his product has the durability of the things we recommend we would gladly replace one with the other.

Mr. Leo M. Micheles: I should like to know if the large department stores check the furs they get in from

manufacturers as to the fastness of the dyes and strength of the skins.

Mr. Schlink: Mr. Freedman can probably answer that better than I can.

Mr. Freedman: I don't believe they are being tested by any department stores but I think that the furriers and the dyers of furs would do the public and all concerned a very good service if they would mark their furs or label them with a certificate stating the number, let us say, of Fade-Ometer hours that they will resist, and if they would also state how they were dyed, not necessarily the dyeing process used, but what may be expected of them, so that the public might know.

This particular program has been arranged for the purpose of getting the dyers and the finishers to see the value of labeling their merchandise so that those who buy of them will know quality when they see it. We would like to see that merchandise certified to, or the quality certified to, by some national association or some association of standing, rather than have it surrounded by a lot of ballyhoo, or testimonials from this, that, or the other man stating what he believes it to be.

Chairman Herrmann: Does that answer your question?

Mr. Micheles: No, sir.

Chairman Herrmann: Why don't you re-state it?

Mr. Micheles: I think the furs should be tested before they are sold.

Chairman Herrmann: By whom?

Mr. Micheles: Furs are sold by the department stores and others to the women. If the skins are not good or if they are not fast in color or if the leather is not strong, those skins should be rejected.

Chairman Herrman: Who do you suggest should do that testing? There is no bureau now that will do that. I suppose it is up to every manufacturer to do his own testing and take the responsibility.

Mr. Micheles: I don't think that any of the furriers in New York City have a laboratory for that purpose.

Chairman Herrmann: That is something to consider.

Gentlemen, we have talked about razor blades, and about suits, and vacuum cleaners, and malted milk shakers, and furs. Are there any other questions that you want to ask?

I want to say I have two little boys at home that have invented their own method of testing my razor blades. They sharpen pencils with them and they afterwards tell me which one was good. (Laughter) If there are any other interesting tests like that that you have, let's have them.

Mr. Schlink mentioned to me before that he was anxious to get away. I would like to condense this part of the discussion if possible. Yet I don't want to deprive anyone of the right of standing up on his feet and asking any question at all.

Mr. Barber: I think the biggest people in the American department store are the buyers—

Chairman Herrman: We are going to hear from them afterwards.

Mr. Barber: They aren't looking for quality. They are looking for price.

Chairman Herrmann: You will be able to get at them afterwards.

Mr. Barber: I think I can tell them something. (Laughter)

Chairman Herrmann: If there are no further questions I would like to express the thanks of the section to you, Mr. Schlink, for your visit and for your very interesting talk. I am sure that we have all benefited by it. (Applause)

Gentlemen, it is seldom that we have found so much impatience to hear the next speaker on the program.

I am sorry that Mr. Kenneth Collins couldn't be here, simply because his name appears on our programs. I am sure that his representative, Mr. Green, will do him justice, and I take great pleasure in introducing Mr. Green who will speak in behalf of Mr. Collins, who is really the Publicity Director of R. H. Macy and not the Director of Research, which function happens to be that of Mr. Freedman, one of our own members.

Mr. Green: (Applause.)

Mr. Green: Mr. Freedman just said to me, "Well, you see what you are in for." (Laughter)

But I think that I express the opinion of Mr. Collins and of our organization and of retail organizations in general when I say that we welcome anything that you have to offer.

Mr. Collins couldn't be here but those of you who know him understand that he is an advocate of high standards whether it is in merchandising, whether it is in the service to customers that come in to Macy's, or whether it is in dealing with individuals, themselves. I am only Mr. Collins' substitute. I shall do the best I can. I can answer questions and I can give you his point of view, to the best of my ability.

I have Mr. Collins' speech here. I insisted that he write it before he went home to-day and I am going to read it to you so you will get his point of view first-hand.

. . . Mr. Green then read Mr. Collins' prepared remarks. . .

(*See next page*)

ARE YOU INTERESTED IN MORDANTS?

Dr. Bancroft will surely have some new angles for your consideration on Saturday, Dec. 5th (Annual Meeting A.A.T.C. & C., Boston, Mass.)

Proceedings of the American Association of Textile Chemists and Colorists

Retailers' Problems With Relation to the Purchase of Merchandise

By KENNETH COLLINS

Publicity Director, R. H. Macy & Co.

SEVERAL years ago a number of retailers apparently thought they had some sort of heaven-sent message to help their customers towards better taste. To have heard these store-owners talk one might easily have believed their stores were being operated for the sale of ornamental and to the exclusion of utilitarian merchandise.

Many advertisements, as well as stating the facts about goods for sale, were educational in scope as they attempted to improve the standards of every day culture. These men were by no means utterly insincere. The money was exceedingly free and people spent with but little regard to cost. It was easy for the average retail store to raise its standards and to sell merchandise of such nature that it would tend to raise the general level of culture.

Stores everywhere began to condemn the garish, rococo effects that had grown out of the Victorian era. I think there is no reason to doubt that a great deal was accomplished. The many expositions of modern art, the exhibits of various standard periods of conventional decoration—all have contributed to some general betterment of the public's appreciation of what is true from what is false. In our own store we instituted what is know as a Chamber of Horrors—collections of merchandise assembled by groups of fastidious women which illustrated deviations from the standards of taste set by the store.

Perhaps we may see something hopeful in all this. If it indicates anything, it indicates that the average merchant would rather do a good job than a poor one; that he would no doubt rather sell goods of decent quality and fair proportion and design, than goods which do not measure up to such a standard. The reverse of the medal is as discouraging as this was encouraging. With the coming of hard-times, it rapidly became apparent that a merchant's morals and standards of ethics might not last through a few months' of going into the red. Some cheaper stores immediately showed evidence of this, as prices tumbled. Competition among them became keener, and their claims became more exaggerated, and what was worse—they consciously began to debase quality very rapidly. It became a very simple matter about 12 months ago, with the sharper decline in commodity prices all along the line, to over-state the case and to offer inferior merchandise masquerading in the guise of quality.

Meanwhile better stores showed what appeared at first to be a demonstration of more backbone, but which now is shown to have been an unseemly optimism. They made few exaggerated claims, but they continued to talk about quality, good taste and superior workmanship. But this stand, I begin to fear, was taken in many cases by stores with very large inventories which they did not wish to liquidate at a loss. They hoped against hope that the recession would be short-lived and that they would be able to dispose of these stocks at 1929 prices.

Today it is apparent to anyone that this cannot be, and so we witness the distressing spectacle of some of the finest stores in the country joining in the mad scramble for volume at any price—screaming in ever louder headlines about the "greatest," "biggest," "most colossal," sale "in history"; and hysterically dumping their fine goods at sharp reductions—reductions which I am afraid have been greatly exaggerated in many instances. As we get farther into the cycle we find that popular priced and lower priced stores have so reduced their quality standards that they have willingly exploited inferior merchandise, merchandise which they would have refused three years previous.

I am informed that there are millions of yards of cotton goods in the U. S. passing currently as broadcloth. Through tests we find evidence of the excessive shrinkage of materials. We find countless dyeing jobs which are so poor that they result in fading and staining of the finished goods. Excessive weighting of silk goods is a frequent offense.

The public is exceedingly gullible and hearing much talk of declining commodity prices believes that many of these materials are unusual bargains. The retailers themselves have been equally gullible and have demanded lower and lower prices. In this concerted drive for goods at decreasingly lower prices, both the public and the retailers seem to have forgotten that labor costs have not been reduced in proportion to raw commodity reductions which in many instances has invited the inevitable debasement of goods.

We find many garment manufacturers lowering the quality of their workmanship, becoming careless of all those details of finish of which they were so proud several years ago. Many converters decreased the number of picks to the inch, dyers and finishers stretched the material excessively thereby causing subsequent shrinkage

after the finished product reached the consumer. Customer dissatisfaction is an inevitable consequence. In plain English we are being avalanched by merchandise of increasingly poor quality. Naturally wearability and with it the consumer's appreciation of worth are decreasing. This is just plain bad business—good times or poor. The public has learned too much about merchandise to be permanently mulcted. As a store's complaints about usability and wearability mount, its reputation declines in equal proportion. There is a very real need for proper and immediate education for all concerned.

I myself believe that this education should take a middle ground between those who are advocating the extreme cheapening of goods today and those who set the highest of standards both of taste and of quality two years ago. Extremists are always dangerous people. The truth usually lies somewhere in between.

Not long ago I heard someone quoted as saying that any well-planned stock in any given department should have 25 per cent of merchandise in doubtful taste. I think this is a rather self-evident conclusion. I don't advocate the sale of gargoyles or of horrible monstrosities, but I do believe there is a large proportion of our population who do not understand the implications of refinement—and who would prefer goods that are at least on the border-line so far as the judgment of discriminating people is concerned.

Perhaps it's a lesson we have learned—that we aren't primarily prophets chosen to lead the people to the mountain-top and point out the promised land. We are merchants whose function it is to sell the public what the public wants. We are in reality the purchasing agents of the consuming public. It is our job to furnish them with the merchandise they want at the price they are willing to pay. But in these remarks I am referring almost exclusively to improvement of taste. I doubt if the public knows what it wants with reference to quality until in the use of a garment or of any household article the public discovers that it will not serve its purpose. Any amateur is fooled by many kinds of inferior workmanship and inferior materials. This amateur only learn the truth about the "bargain" he bought when the chair breaks or the dress shrinks or the suit wears out before its time. Here I believe it is our duty as business men who wish to keep our customers, to set up rigid standards of quality below which we will not go. You know better than I that a number of these standards have already been created. What they need is publicizing. The inexperienced purchaser cannot be expected to know what will wear and what will not without a certain amount of training and without certain easily recognizable standards being placed before him.

I am told that this organization has devised certain tests for the purpose of ascertaining whether merchandise is satisfactory. If I am correctly informed, then effective publicity should be employed to make people understand what they ought to expect of the goods they buy.

Discussion

Mr. Green: Some of the remarks made by Mr. Schlink naturally invite comment, particularly as we represent a department store that sells to the public.

Mr. Collins says here that we are the agents of the public, that we are their purchasing agents. We are. We feel that we have a responsibility to those people that is greater than our responsibility to anybody else in the scheme of things in our economic arrangement. We are distributors of merchandise. True, we buy merchandise from manufacturers. We get it into our store. We display it. We deliver it. But our bread and butter depends upon customer satisfaction.

We will not knowingly sell merchandise to the public, to our customers, at anything other than the true value as reflected in its price and in our description of the merchandise.

At Macy's we make every effort to know all we can about the merchandise we sell. Of course, when a buyer goes into a mill in New Hampshire, or out in Chicago to buy some leather jackets, he isn't always the man who can tell the value of those jackets at a glance, but when those jackets, or shoes, or whatever the article happens to be, comes intour store we rigidly test them. We don't test every article that comes in, but we test representative merchandise from each vendor, and particularly those articles which we are going to sell in great quantities and which we want to go out to homes in the metropolitan area as ambassadors of good-will for our store.

We are just as anxious as any organization—whether it is Mr. Schlink's organization, Consumers Research, or whether it is the Bureau of Standards—to promote high quality and high standards in merchandise. (Applause.)

Mr. Barber: Mr. Chairman, I spent fifty years of my life as a manufacturer, learning every branch of manufacturing. I think I know something about it. In the last five years or so I have been acting in the capacity of consultant, due to my health.

I am interested when I go into a department store to see how their silk is marked.

The house that the last speaker represents used to mark silk goods "Pure Silk Goods." The last time I was in that store about a year ago they had some goods there marked "All Silk." I bought half a yard. To the best of my recollection that material sold for about $1.69 or $1.79 a yard. I am not positive about the price. But, instead of that fabric being all silk I found it to be about sixty per cent tin and forty per cent silk fiber.

I contend that Macy's, if they are maintaining a laboratory for the purpose of testing merchandise, certainly knew that that fabric wasn't all silk. Therefore, they were misrepresenting that merchandise to the ultimate consumer.

That is the point I want to bring to you, gentlemen. We ought to have a way of seeing whether our merchandise, if it is wool, is composed forty per cent of shoddy and sixty per cent virgin wool, or vice versa. If it is silk, pure silk, let's have it marked silk. If it is silk and tin, let's have it marked silk and tin, so that the public will know they are buying tin.

That is all I want. The public should know what they are buying, and I think it is up to the chemist in conjunction with the dyer and manufacturer to mark those goods, "These Goods Are Weighted."

Mr. Freedman: Mr Chairman, I don't believe it would be fair to ask Mr. Green to answer Mr. Barber on that. I would rather take the responsibility of doing that because I happen to be the individual who is responsible for the testing of merchandise and for the marking of merchandise.

I might say that any statement in any advertisement that is printed by Macy is edited by Macy's Bureau of Standards as to the truth or falsity of claims and any claim which is deemed to be false is removed from the advertisement.

I should like to ask you whether that sixty per cent weighting that you found in the fabric was based on the weight of the cloth or was it based on the weight of the raw silk used?

Mr. Barber: My figure was based on the weight of the raw silk in the cloth.

Mr. Freedman: And are you acquainted with the rules set down by the Silk Association of America?

Mr. Barber: They haven't set any rules down yet.

Mr. Freedman: If I remember correctly—and I believe Mr. Frank Stutz who is present and who represents the Better Fabrics Testing Bureau will agree with me—the Silk Association in the latter part of 1929 or the early part of 1930 set certain standards for weighting and they said that there must not be more or should not be more than a certain per cent of weighting in various types of silks, and they listed crepes, and Georgettes, and satins, and other materials.

I was just wondering whether you conducted your analysis in accordance with the method prescribed by Dr. Appel of the National Bureau of Standards, which method is also used by the Silk Association of America, and whether or not that silk was overweighted when compared with those standards.

Before you answer that, however, I would like to say this: The term "all silk" is considered as being correctly applied to any material the textile fiber of which is composed of nothing but silk. If you say "all wool," you cannot have cotton present other than as an accidental impurity, and if you say "all rayon" that also holds good there. However, should you have asked for pure dye silk you would have obtained silk which was made of silk and dyed with the necessary finishing material, and you would not have found any weighting present.

I agree with you when you say that the amount of weighting should be stated but we cannot get anybody to agree with us on that as yet and it is a difficult thing to pioneer in each and every item that we carry. We would like your cooperation and that of all those who are minded as you are in correcting any situation which is not correct at the present time.

Mr. Barber: In replying to you I will say the salesman who sold me that goods didn't know but what they were pure silk, although it was called "All Silk." It wasn't an advertisement—

Mr. Freedman: Well—

Mr. Barber: On the other matter, the Silk Association adopting a standard, I will say that was only a recommendation that was made by that committee to the trade, but no rule was established on it. The Silk Association have been trying for the last four or five years to solve this problem of the marking of silk. I don't know how conditions are now but I do know when I was in the manufacturing end we had a trademark and we shipped our goods out under that trademark, but as soon as they got into the store—whether your store or other stores in New York, or Philadelphia—the wrappers were taken off and our marks removed. I don't consider that fair, either.

The public are not expert chemists, nor are they expert at anything else. But they do look to receive the merchandise which they pay for. And sooner or later we are going to suffer from that very thing, because the merchandise sold to the public is not what they think it is when they buy it.

Mr. Freedman: I have no quarrel with you, Mr. Barber. I agree with you one hundred per cent.

Chairman Herrmann: I have only one remark that I would like to slide in on this thing, after listening to the very interesting talk of Mr. Green and the comments.

I would like to consider Mr. Green and Mr. Freedman here in a rather impersonal way. I am not addressing my remarks to the very honorable store that they represent. But I want to say, in behalf of the manufacturer, that I don't know of a manufacturer who takes any joy in manufacturing sub-standard merchandise. I don't know of a woolen manufacturer who wouldn't like to manufacture fine broadcloth. I don't know of a dye manufacturer that wouldn't rather sell exclusively the finest merchandise he has.

Any sale organization knows that it gets the greatest joy out of selling the higher priced, fine stuff, that the salesman takes a personal pride and pleasure in offering for sale.

If the department store is the public's mouthpiece to us then may we in turn say we must consider the department store as our mouthpiece to the public? We cannot speak to the ultimate consumer.

I cannot go to Mrs. So-and-so or Miss So-and-so and talk about Indanthrene this and Napththol that and Alizarine so-and-so. Unfortunately, I can't even go to the department store and say it. I have to go to a manufacturer and he in turn must go to a cloth cutter, who in turn must go to a tailor, who in turn must go to a jobber, and by the time you get to the jobber's salesman, he doesn't know what it is all about, and unfortunately the beautiful story is lost.

That situation I think requires correction. We should try to bring the manufacturer, let us say, our group, or the people we represent, into closer contact with the group that these gentlemen represent, so that whatever inspiration we as salesmen can give these gentlemen they in turn can give to the public. Then they will not only have to sell cheap merchandise and they will not have to sell exclusively with glaring placards about cut prices, and they may also find it possible then to convince the public that a dollar extra for this and fifty cents extra for that is money well spent.

In a way it is rather unfortunate that these high priced malted milk shakers were all so poor. (Laughter.) We shouldn't draw too much of a lesson or a conclusion from the exception to the rule. I believe generally speaking, whether it be a parcel of land, a house, a dress, a suit, or a book, the higher priced article should be and usually is the better article and that if goods are sold at very, very low prices that is prima facie evidence that the merchandise is not worth much more than what is being asked for it.

If we can educate the public to spend a little more in return for quality and if the department stores can word their advertising and their sales appeal so as to educate the public in the same way that other sales organizations must educate their consumers, possibly something constructive will be done.

I think I saw Mr. Harris' hand up. Is there anything further you wish to say?

Mr. Harris: I just wanted to say this: Mr. Freedman said that all silk was simply silk that did not contain cotton. Many women today have learned tbout tin weighting and when they see a thing labeled "All Silk" they think it is all silk and contains no tin. Therefore I just want to give him this message: I think you are rather beating the devil around the bush when you say "All Silk," when it is a heavily weighted piece of silk. In other words, it doesn't differentiate at all to the average woman.

Mr. Freedman: The term may not differentiate it to the average woman but, as I recall it, a few years ago I attended several technical meetings and I discussed this very problem, and I made a serious effort to have that defined. I do not know of any weighters or finishers who have attempted to rectify that situation and I do not know of any converters who have attempted it, with possibly here and there an exception. The exceptions are rather few I am sure.

It seems to me that the answer to this situation—and that by the way is what the Program Committee of the New York Section is striving for—is to bring up all these questions for the purpose of having merchandise truthfully and honestly labeled. That should not come from one organization. By that I mean one store, or one firm, or one individual. I believe the responsibility for it rests right here rather than anywhere else.

Mr. Chase: I do not know very much about silk but I do know that the whole nomenclature of the silk industry is very much confused and I think that it might be a very good idéa for the Association through one of its silk committees possibly or through some other committee to do something toward the standardization of the nomenclature of silk.

For example, "all silk" is generally considered to be what Mr. Freedman has said.

"High weighted silk" is silk which is brought up to the original weight of the raw silk. By some of the leading manufacturers that is known as "unweighted silk" or "pure dye silk." Others say just the opposite, that it is not pure dyed silk and that it is weighted.

There is one other thing in this connection and that is that it has been stated time and again that a certain amount of weighting does not injure the silk, in fact, enhances the beauty of it.

I think it might be very well for the Association as I said at the start to do something on standardization of terms relating to silk. (Applause.)

Chairman Herrmann: I believe as Mr. Chase does that we may very well take up in one of our national committees devoted to the study of silk the subject of nomenclature.

Mr. C. M. E. Schroeder: What Mr. Chase has just intimated brings up a question that I was going to introduce, myself.

I don't happen to be versed in the present practice of silk finishing but I remember a good many years ago, while I had contacts in that line, the subject of silk weighting was rarely debated. The finisher was allowed to do anything he could. In other words, originally his license came to reintroduce weight equivalent to the boil-off or any more than he could put in, and the market took what they got, without criticism.

Also I remember several years ago there was agitation on this same subject of the amount of weighting that would be permissible in merchandise claimed to be real silk, according to the process which was then involved. In other words, weighting was not only necessary for the reproduction of the original crude silk or raw silk in the gum but in addition to that it was a help in the proper dyeing of certain colors, at least, and very little silk was

expected to be without weighting—particularly tin weighting I have reference to.

This subject that I have heard discussed tonight appears to go back to an open question, and I remember that there was quite some agitation on the subject of producing or inaugurating a standard system of weighting. What happened to that I don't know. It seems to have been lost track of.

I remember that for some silks—for instance silks used in certain ribbons, like hatbands—one hundred and ninety per cent was considered all right and they were taken on the market because those silks had no stresses to stand. But when it comes to umbrellas, for instance, or dress goods, which are heavily weighted, it is an accepted fact that those goods will not last long, especially where creasing is a common occurrence.

What is going to happen at the present time with regard to eliminating excessive weighting I don't know. I think, myself, it has been reduced very materially. I hope somebody can bear me out on that. As I say, I am rather unfamiliar with the present practice.

But it occurs to me that we are not really discussing a new thing, although I have no idea as to what has been done or what has been accomplished in regulating that overweighting fault. There is no question but that in times past we had very much more overweighting than we have today. Perhaps it is due to the fact that there are different kinds of dyes being used.

I believe nobody will dispute the fact that it was considered good practice to use tin to aid in the dyeing but as far as ordinary wearing cloth is concerned, there is where it should have been reduced, instead of increased, as it was up to a point where it actually acted as a destructive agent.

If there is anybody who has any information to clear that up I would like to hear it.

Mr. Barber: I would like to say that, to my knowledge, instead of weighting having been reduced it is being increased. Instead of being fifty to sixty per cent weighted, as it was at one time, the percentage is going up to seventy and seventy-five and the majority of yardage that is being processed today is being processed in that way.

Mr. Schroeder: Isn't it a fact that there was quite a strong agitation a few years ago to eliminate weighting as far as possible? It wasn't found practical and it has possibly gone up again to a limit that may approach some of the older practices. That I don't know.

Mr. Barber: I know for a positive fact, gentlemen, of many thousands of yards of raw grey goods sold to a converter with as low as fifty-two picks of three-thread crepe filling and one hundred sixty-five double threads to the inch for as low as from twenty-five to twenty-eight and a half cents a yard in the last three months. If that was pure dye, why you couldn't sew anything. If you would blow through it it would all separate. But they loaded it up seventy-five or eighty per cent and of course the tin held it together and shrank it, so they managed to get away with a little bit.

Mr. Schroeder: Looking at it from the economical standpoint, judging from the price of tin and the reduced price of silk, I don't know where the manufacturer benefits very much by adding tin.

Chairman Herrmann: Gentlemen, I think this whole thing resolves itself into a matter of nomenclature, as Mr. Chase suggested. There is room in this world market and in our local market for pure silk. There is also room for thirty per cent weighted silk, fifty per cent, one hundred, one hundred fifty, two hundred, or what-have-you. Let the name and the price describe the merit of the product. That is essentially what we are trying to achieve here.

We are not here to arbitrarily tell anyone how much tin he must or must not put on his silk. We think that the competitive market will soon take care of the man that persistently misrepresents his merchandise. We are of the opinion that the time is ripe for all of us to give careful thought to this idea of misrepresentation.

It hurts us all when arraignments are made loosely and all silk manufacturers are classed as charlatans and misrepresenters and almost called thieves.

That isn't a fact. The average silk manufacturer is an honest man and he produces the type of merchandise that is ordered, for which he is paid, and which I am quite certain he is perfectly willing to describe to the particular customer for whom he is doing that work. In fact, as far as I know, there usually is nothing held back as between dyer, weighter, and his particular customer.

What happens to that merchandise after it gets out, of course we don't know. Possibly we are bearing the odium of other people's misdoings, and I am therefore very strongly in favor of having this matter of nomenclature settled so that we will eventually be able to distinguish between pure silk and weighted silk and overweighted silk, and so that the purchasing public will be able to distinguish between these articles.

I believe that once upon a time there was a similar agitation as regards linen and cotton and some very, very stringent laws were passed with respect t othe mismarking of linen. How effective they are I think we can all judge. As far as I know, it is very seldom that we find articles today marked linen which are not linen. They may be marked half linen or semi-linen or some trade name that sounds like linen but if they are marked and guaranteed as being linen they usually are linen.

We should try to bring the same thing about in silk without having recourse to misleading terms, because a person who doesn't have the glossary of terms will not know that "all silk" means there is no cotton present, or that cotton is present only up to a certain point, and absent beyond that. We should avoid names like that.

I think that is the message of the speakers of the evening. They cannot dictate to us what we shall make but they can ask us to represent to them what we have made. Is that right?

Mr. Green: That is quite right.

Chairman Herrmann: Is there any further discussion? I am sure it has been very interesting and if it gets us all to thinking on the subject on our way home and talking about it outside it will have accomplished considerable good.

If there is no further discussion I would like to ask for a rising vote of thanks for Mr. Green. I thanked the previous speaker on behalf of the Section, before he left, just in the interest of saving time, but I would like to call for a rising vote of thanks to Mr. Green at this time.

The members rose and applauded.

The meeting thereupon adjourned at ten-ten o'clock.

Communication

American Dyestuff Reporter,
440 Fourth Ave.,
New York City.

Dear Sirs:

At the meeting of the American Association of Textile Chemists and Colorists last Friday at the Chemists' Club, 41st St., New York, the writer feels that probably the right impression was not left with the members in the discussion of the excessive weighting of silk piece goods.

My feeling in the matter is that during the last five years the manufacturing of silk goods has fallen in second place and is only a piece of putty in the hands of converters whose one object apparently is to see how cheaply they can press the manufacturer for raw merchandise, depending largely on this excessive weighting of silk goods which is a deception both to the buyer in our retail stores and particularly so to the general public who are the ultimate consumers.

The converter is the cancer of the industry and while it is impossible to eliminate him from the industry, some steps should be taken to prevent him demoralizing the beautiful fabric known as "The Queen of Textiles"—namely silk.

Yours very truly,

ERNEST BARBER.

SIXTY-EIGHTH MEETING OF RESEARCH COMMITTEE

THE Sixty-eighth meeting of the Research Committee of the American Association of Textile Chemists and Colorists was held at the Engineers' Club, Boston, Mass., October 16th, 1931, at 3:45 P. M.

The following were present:

Chairman, PROF. L. A. OLNEY

Wm. H. Cady	Dr. Jos. F. X. Harold
Hugh Christison	B. L. Hathorne
Ralph Culver	Henry F. Herrmann
Harry R. Davies	Wm. R. Moorhouse
Walter C. Durfee	Dr. Hans Myer
Walter E. Hadley	Walter S. Williams
	Alex. Morrison, *Sec'y.*

Regrest at inability to be present were received from Messrs. Clayton, Hirst, Killheffer, Monro, Rose, Scott, Seibert, Wheeler and Wood.

Dr. Olney reported on the progress of the work being carried on by the Research Associates at the Bureau of Standards and at Lowell Textile Institute.

Dr. Harris is continuing his work on the Iso-Electric Point of Wool, and a paper on this subject is in preparation. A paper on his work, in connection with the Effect of pH on Photochemical Decomposition of Silk will be published in the near future.

Mr. Smith is investigating the Effect of the Presence in Cloth of Small Amounts of Manganese, Iron, and Copper Salts on Its Deterioration upon Exposure to Light. He is studying the Effect of Acidity and Alkalinity of Cotton Cloth on Its Deterioration upon Exposure to Light. He is also working under the direction of the Sub-Committee on Light Fastness on a study of Dr. Krais' Test Paper, and the results of this work are nearly ready for publication. He is also working on a Comparison of the Fadeometer vs. the Fugitivometer.

Mr. Ryberg is working under the direction of Dr. Olney at the Lowell Textile Institute on a study of the carbonizing of wool, with its many ramifications of trouble.

Mr. Christison, Chairman of the Sub-Committee on Fastness Tests for Dyed Wool, discussed their washing fastness standards, and it seemed to be the consensus of opinion that two sets of standards should be adopted, one for the let down of a color in washing and one for the staining of other fibers. The Committee is to make further study of standards with these two thoughts in mind.

Mr. Cady, Chairman of the Sub-Committee on Light Fastness, reported for his committee enlarging somewhat on the work Mr. Smith is doing for his committee.

Mr. Hathorne, Chairman of the Sub-Committee on Rayon, reported for his committee, calling attention to the recent publication in the Proceedings of their work on Identification of the Rayon Fibers. Regarding future investigations to be made by his committee in connection with a study of uneven dyeing of rayons due to variance in elongations and tensile strengths, a committee of the Society of Testing Materials has written him that these tests were out of the province of his committee or our Association. Mr. Hathorne has informed them that it was in the province of his committee and asked for a vote of confidence. It was unanimously voted that a study of the variance of elongation and tensile strengths of rayons in producing uneven dyeing was within the province of our Association and his committee.

There was considerable discussion in regard to incorporating a list of imported dyes with the list of American dyestuffs in the Year Book. It was the opinion of a majority of those present that something should be done along this line but just what, could not be decided. This will be discussed at a future meeting.

The meeting adjourned at 5:55 P. M. to meet next in New York, November 6th. 1931.

Respectfully submitted,

ALEX. MORRISON,
Secretary.

NOTICE

The Secretary would like the present addresses of:

Charles H. Church
George S. Hodges
Walter C. Kirk
Wilfred T. Normand, Jr.
Sidney Springer
Louis A. North
Thomas O'Byrne
John C. Robertson
Robert E. Sargent

ALEX. MORRISON,
Secretary.

NOVEMBER MEETING, NEW YORK SECTION MEETING

THE November meeting of the New York Section will be held in Baterson, New Jersey, on Friday evening, November 20th. This meeting will give the Association members an opportunity to attend the Silk Show which will be held in Paterson, November 14th to 21st.

The speaker will be Dr. William D. Appel, Chief, Textile Section of the U. S. Bureau of Standards. The subject matter of his paper will concern itself with the standardization of textiles of interest to the dyer and finisher from the point of view of the work of the Textiles Committee on the Federal Specifications Board and the work of the Bureau of Standards.

CALENDAR OF COMING EVENTS

Meeting of Rhode Island Section, Providence, R. I., November 13th.

Meeting of New York Section, Paterson, N. J., November 20th.

Annual Meeting, Boston, Mass., December 4th and 5th.

WOULD IT BE OF ADVANTAGE
TO STANDARDIZE METHODS OF
ANALYSIS OF SULPHONATED OILS?
Come to the Annual Meeting
to hear what Prof. Grimshaw
has to say on this subject.

AMERICAN DYESTUFF REPORTER

Devoted to the use and application of dyestuffs and the mechanical equipment incidental thereto.

LOUIS A. OLNEY
Professor of Chemistry and Dyeing, Lowell Textile Institute
Directing Editor

NORMAN ALBIN JOHNSON
Managing Editor

MYRON DREW REESER
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RELIEF PLANS

BY VOTE of the employes, one large industrial concern has put into effect a plan whereby the available work will be distributed among the total number of workers and each worker will be assured of at least some income. The plan provides for rotation of available work and other means by which hourly-rated and piece work employes on the payroll this last November 1st may be assured of receiving, during the next six months, not less than the equivalent of one-half of their average full time earnings up to $15 per week, and their actual earnings in case the latter amount to more than $15 per week. This plan is the one which has been adopted by the General Electric Company and its employes.

President Gerard Swope announced on October 28th that a tabulation of the employes' votes showed that 89.5 per cent of those eligible had cast their ballots and 97 per cent of these favored adoption of the plan. At that time 35,000 of a total of 39,000 had voted and the adoption of the plan was assured.

The fund for making payments is made available through contributions of the employes and the company. The unemployment emergency fund of the company, to which those employes earning 50 per cent or more of their average full time earnings (this includes all office, administrative and executive employes, and officials of the company) who have, in the past been contributing one per cent of their earnings, was increased on November 1st to two per cent—the company contributing an equal amount. In case these provisions prove inadequate, the board of directors will be asked to authorize additional payments to the fund by the company, without additional contributions by the workers.

The plan illustrates the method by which one company is seeking to bring about insurance against unemployment and its devastating effects upon the social life of the individual. Other firms are also endeavoring to bring about equal distribution of the available amount of work among a larger number of laborers. Most of these plans take effect by the introduction of the shorter working week.

According to a survey recently completed by the Department of Labor, there is a growing sentiment in favor of the five-day week. The report indicates that the automobile industry, with 44 per cent of its workers on the five-day basis as having the highest percentage. This is followed, in turn, by the radio industry, the dyeing and finishing textile industries, and the aircraft industry. It might be interesting to note that 27 per cent of the workers in the dyeing and finishing industries are on a five-day week. Plants temporarily operating on a short week basis because of the depression were not included in the survey.

"The five-day week as a permanent labor policy in industry has been making considerable progress in the last few years," the report states. "The reduction of working hours has been a matter of evolution, the history of labor in the United States shows that there has been a constant shortening of the working day. A century ago a man's work was from sun up until sun down—11, 12, and 13 hours a day. These were the hours of the building trades and of shop and factory workers. During the years, hours have been reduced to 10, to 9, to 8, and in some instances to 7, this movement having been led mainly by the organized building trades."

And now from the Pacific Coast comes the word of a large lumber company which is planning to go on a six-hour day in the near future. Recently we noted a news item concerning a large oil refinery which is planning to enforce a forty-hour week, effecting 1,350 employes, who will, however, have the privilege of voting on the issue.

What will be the effect of these measures which are now being adopted? Will they be permanent institutions —between the laborers and their employers? We think the shorter week is here to stay, and for verification we again turn to the survey of the Department of Labor. In the questionnaire sent out by this department in gathering its information, it was ascertained that there is a decided movement to make the shorter week a national basis, and that a large number of those plants who are temporarily operating on a five-day basis, will, after the depression period is passed, readjust their organization to conform to a decrease in the number of working hours. Speed of production has advanced a great deal faster than the amount of consumption. Fewer hours of labor are inevitable if we are to maintain an economic balance in the future.

PATERSON SILK SHOW

WE WISH to call your attention to the Silk Show which will be held in Paterson, New Jersey, during the week of November 14th to the 21st. A certain space will be alloted to every group of the industry. All busi-

nesses related to the silk industry have been taken into consideration and will be represented accordingly. In connection with the machinery exposition there will also be held the National Silk Convention and the Silk Institute.

The various troubles of the industry as a whole will be analyzed and discussed, and plans for the improvement of all phases of the silk and rayon business will be considered. Among the speakers who have been secured for this important industrial week include association heads, machinery experts, scientists, leading executives and specialists of the United States Department of Commerce and the United States Department of Labor.

Another important feature of the week will be the style show, in which wearing apparel will be shown by models who have appeared in the leading Broadway musical productions. An exhibition of fabrics and garment designs will also be held—prizes to be awarded for the best displays. The lighter side of the week will likewise include a lively series of banquets, golf tournaments, theatre parties and social events. In short, National Silk Industry Week promises to offer one of the most complete, enjoyable, instructive and profitable events that has ever been held in the textile and allied industries.

Of especial interest to textile chemists and colorists will be the booths of dyestuff producers, dyeing machinery manufacturers, and those of manufacturers of textile specialties, such as oils and other finishing materials.

The New York Section of the American Association of Textile Chemists is planning to hold its meeting in Paterson on November 20th in conjunction with the Silk Show and will have for one of the speakers, Wm. D. Appel of the Bureau of Standards.

The Show is under the direction of John J. Fitzgerald, Secretary of the Paterson Chamber of Commerce. Everyone who attends will be well repaid for his effort. One of the features of the week will be the *Silk Digest Weekly* daily edition which will appear every day while the show is in progress.

Unemployment Relief Committee

The Chemical, Drug and Paint Division of the Emergency Unemployment Relief Committee of the City of New York was organized October 23rd by Horace Bowker, Chairman.

Mr. Bowker states that several prospective members have not yet been heard from and that the personnel of the present Committee will be enlarged.

The Committee consists of: *Chairman,* Horace Bowker; *Vice-Chairman,* George A. Benington, *Treasurer,* A. W. Goeller; C. E. Adams, E. M. Allen, R. T. Baldwin, William S. Gray, Glenn Haskell, Williams Haynes, L. S. Kohnstamm, Holland R. Wemple, F. G. Zinsser, Dr. J. Leon Lascoff, P. C. Magnus, James A. McNulty, Eugene L. Norton, E. S. Phillips, Arthur S. Somers, Dr. Maximilian Toch and W. J. Kramer.

Correction

In the article by Neil E. Gordon, George Seidel, B. W. Allan, and C. M. Loane entitled "Metallic Salts of the Free Acid of Orange II," appearing on page 671 of the October 12th issue of the AMERICAN DYESTUFF REPORTER, the following errors have been brought to our attention:

In the last paragraph on page 672, line 5, $Fe(OH)_3HX$ should have read—$Fe(OH)_3$—HX.

Page 675, column 1, line 9, $FeCl_3$ should be $TiCl_3$.

Page 675, column 2, line 11, the word "of" should have been eliminated before "pattern."

A New Publication

"Vim Short-Center Drives" is the name of a new 148-page belt treatise compiled by the Engineering Research Staff of E. F. Houghton & Company, Philadelphia, Pa. It is an entirely new treatment of short center drives. The book contains charts, tables, and engineering data on 5,000 standard Vim efficiency drives ranging from 5 to 100 h.p.

Copies will be delivered by a Houghton distributor to executives and engineers directly interested in transmission who will send in their requests.

Consolidation

Negotiations have been completed for the consolidation of Paper Makers Chemical Corporation with Hercules Powder Company, it was announced recently by Russell H. Dunham, president of the Hercules Powder Company.

Paper Makers Chemical Corporation, with headquarters at Kalamazoo, Michigan, and plants and offices in all parts of the country, is a large supplier of rosin size, coatings, alum, and other chemicals to the paper industry and is a manufacturer and jobber of a number of industrial chemicals. The concern will continue to operate under its own name and with its present organization which is headed by W. J. Lawrence of Kalamazoo, president.

Homestead Representatives

Chatard and Norris, 218 Water Street, Baltimore, Md., have just been appointed as exclusive representatives of Homestead Valve Manufacuring Company for the Eastern part of Maryland and the District of Columbia.

Chinese Imports of Indigo and Sulphur Black Increase

Imports of indigo and sulphur black into China through Shanghai amounting to 202,000 piculs (1 picul—133-1/3 pounds) and 58,200 piculs respectively during the first half of 1931, showed a considerable increase compared to indigo imports of 120,600 piculs and sulphur black receipts of 33,700 piculs in the first six months of 1930, according to Assistant Trade Commissioner Paul F. Kops, Shanghai.

De-Sizing in Preparation for Dyeing

(*Continued from page* 716)

the presence of residual starch size leads to imperfect penetration and irregularity of coloring in dyeing and it also prevents the securing of a soft handle. Complete desizing is essential to the successful dyeing and finishing of fine filament rayon fabrics such as are today very popular.

On the whole, practical experience indicates that the most satisfactory method for desizing fabrics consists of impregnating them with a solution containing 1-3 grams per litre of a starch-liquefying enzyme (for example, Diastafor, Degomma, Rapidase, Novo Fermasol, etc.), then maintaining them at about 50° C., and afterwards thoroughly washing with boiling water. But there is one important point in this procedure which should be observed. The consequent desizing is much less effective when the fabric, before impregnation with the starch-liquefying enzyme, is passed through boiling water. This treatment swells and partially solubilizes the starch present in the fabric and thus considerably assists its attack by the starch-liquefying enzyme.

Determining Amount of Starch

It is sometimes necessary to determine the amount of starch in a sized fabric. In such cases the method of D. A. Derrett-Smith (J. Text. Inst., 1930, *21*, 583) will be found useful.

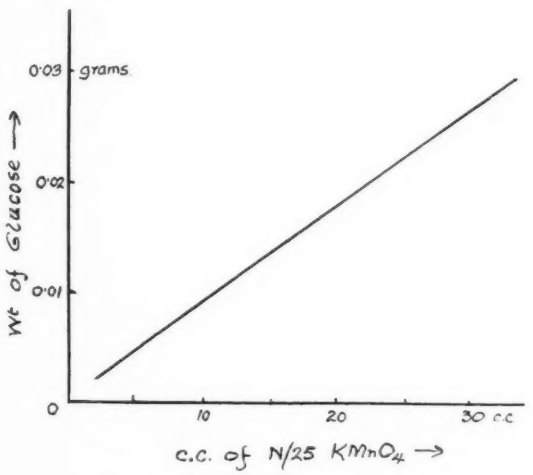


Fig. 1

Smith's method is based on the estimation of starch by hydrolyzing it with hot sulphuric acid into glucose thus:

$$\underset{\text{Starch}}{C_6H_{10}O_5} + H_2O \rightarrow \underset{\text{Glucose}}{C_6H_{12}O_6}$$

and then determining the amount of the glucose by means of a modified Fehling solution. The following is a brief description of the method:

About 1 gram of the fabric is cut up into small pieces (each about one-eighth inch square) and placed in a 175 c.c. flask provided with a loose-fitting pear-shaped stopper and containing 30 c.c. of water and 25 c.c. of 2N. sulphuric acid. The flask is then immersed for exactly 2½ hours in a boiling water bath, and the contents are then filtered through a fine grained sintered Iena glass funnel, the combined filtrate and washings being neutralized to Methyl Orange by addition of sodium carbonate.

The glucose in the solution is then estimated by heating it to the boiling point and adding a boiling mixture of 95 c.c. of solution A and 5 c.c. of solution B (these form a modified Fehling solution according to the Braidy method). The precipitated cuprous oxide is then filtered off and the precipitate washed on the filter funnel with 15 c.c. of a ferric iron solution C whereby an amount of ferrous iron corresponding to the cuprous oxide passes through into the filtrate which is then titrated with N/25 potassium permanganate. The amount of permanganate used is a measure of the starch present and this amount can then be directly noted from the curve in Fig. 1. Smith established that the type of starch had no appreciable effect on the results by carrying out estimations with wheat, sago maize, rice, and potato starches.

In order to secure an absolutely reliable result it is advisable to also desize a portion of the fabric and then carry out a blank starch determination with this; the amount of N/25 potassium permanganate required in this estimation should be deducted from that required for the original fabric. Desizing can be effected by steeping the fabric in a solution at 50° C., made with 3 grams of common salt and 3 grams of Novo Fermasol dissolved in one litre of water, for ½-¾ hour, then washing and repeating the treatment.

It has also been established that the presence of such assistants as soap, sulphonated and soluble oils do not affect the estimation of starch in a sized fabric.

The special solutions A, B, and C required have the following compositions:

Solution A:
129.7 grams of sodium carbonate.
50 grams of sodium bicarbonate.
1000 c.c. total volume.

Solution B:
100 grams of copper sulphate.
1000 c.c. total volume.

Solution C:
100 grams of iron alum.
140 c.c. of conc. sulphuric acid.
1000 c.c. total volume.

The method is one which can be carried out quite quickly and is more accurate than the method in which the amount of starch present is determined by measuring the loss of weight produced by treatment of the fabric with a starch-liquefying enzyme.

Color Industry's Share in the Program of the 72nd Congress

By **WALDON FAWCETT**

Circumstances have conspired to make the first session of the 72nd Congress predominantly a period of business legislation. A major circumstance, obviously, is the disordered condition of the business world and the train of economic problems that represent either the cause or the effect of this lapse. Only slightly less influential, however, is the circumstance that many of the perennial political issues of the post-war period have gradually been disposed of, leaving the stage vacant for the lesser as well as the greater obligations to business.

SET over against the seemingly favorable prospect for business legislation, is a counter-influence, recognition of which is requisite for a fair appraisal of the situation in 1931-32 at the U. S. Capitol. The negative factor is found in the narrowness of the working majorities in both the Senate and House of Representatives. Neither political party will have, dependably, and all times, such a margin of partisan votes that the fate of any given measure may be safely predicted on the basis of party commitments.

In one sense, an uncertain balance of power in Congress gives latitude to the legislative program in that it permits the presentation of measures that might have no chance of a hearing if party dictatorship were absolute. But the absence of a "safe" working majority injects the element of the speculative into every legislative issue. Because, every vote brings the possibility of realignments and the legislative body is likely to be at the mercy of blocs and of vote traders. Finally, the influence of unstable political control and close divisions on roll call is communicated to the Committee rooms where the real work of Congress is done. The last session of Congress revealed all too clearly how tragic may be the consequences of delays in reporting, out of Committee, bills for business relief. And a divided Committee may always becloud an issue by submitting both Majority and Minority reports. It is difficult enough to impress the Rules Committee and bring a measure to the floor when the Committee to which a bill has been referred for recommendation submits a unanimous or virtually unanimous report.

Members of the dyestuffs industries, who hope for constructive legislation in behalf of business, have not occasion to feel discouraged by a flood of bills that, if not irrelevant, are of doubtful practicability. It is inevitable that the acuteness of the situation should bring a deluge of bills dealing with unemployment or unemployment relief. Similarly, has the condition of the U. S. Treasury opened the door for the Congressional consideration of the whole subject of Federal taxation. It is fortunate for the fate of business that even before the present crisis was reached, tax-ridden industry (as exemplified, for example, by the textile enterprises of New England) had taken the most practical steps to bring home to the lay mind and the political mind the necessity for a readjustment of the tax burden.

In its more dramatic aspects the taxation issue is, perhaps, most sharply focused for the members of the color industries via the proposals for excise taxation, or taxation of sales. Broadly the proposal is, of course, a resurrection of the war-time expediments for increasing revenue temporarily in a period of emergency. Even more today, however, than at the war stage, is the Congressional policy a matter of importance to business because, to a degree heretofore unequalled, the legislatures of the several States are taking their cues from the practices of the Federal Government. This imitative policy has long been apparent in respect to income and inheritance taxes. Now, the spirit is communicated to special taxes. And the response at State Capitols to the recent decision by the Supreme Court of the United States upholding special taxes upon chain stores only goes to show how strong is the imitative instinct.

The question of sales taxes will precipitate probably the sharpest cleavage of sentiment known to the 72nd Congress. One school of thought holds that levies upon sales represent the only possible means of collecting from the entire population the additional income needed for the support of the Government. A dissenting school, led by such determined antagonists as Senator Capper, is unalterably opposed to sales taxes as constituting a check upon consumption and a chill to industrial operations. Any discussion of the issue will be punctured by exhibits of the experience of other countries, notably Canada, with various versions of the sales tax.

To complicate the situation in Congress, the members who are favorable to taking toll of sales are by no means a unit in convictions as to what form the sales tax should assume. One wing holds for a general sales tax, or turnover tax. This contemplates a levy of, say, one-half of one per cent, upon gross sales. It immediately incurs the objection that in industries where distribution passes through successive brokerage, sales agency, wholesale and retail levels, the cumulative burden upon consumers would be proportionately greater than industries where distribu-

tion is direct from producer to retail dealer. There would remain for solution, too, the difficult question of the liability for sales tax of dyers, processers, finishers, etc.—intermediaries in manufacture who, in many instances, do not take title to goods and are paid simply for contributory or conversion service.

The other wing of the sales tax support contends for a limited sales tax, so called—a system of special sales taxes or "stamp" taxes upon particular articles or lines. The inspiration for this gesture is found in the success of the several States in raising revenue by special taxes on gasoline. Applied nationally, there would immediately obtrude the problem, which proved so difficult in war-time, of separating or segregating for discriminatory taxation the "luxuries" or less essentials. Some members of Congress who have no convictions based on principle are, nevertheless, reluctant to risk another adventure with special sales taxes because of the chorus of protests that assailed them, in former years, because of what the public denounced as "nuisance" taxes.

Apart from the sales tax in name, but at one with it in purpose and method, is the plot of the Postmaster General for an increase in the letter postage rate. The head of the Post Office Department requested of the 71st Congress authority to make this price-raise, and go no where. Now he is coming to the 72nd Congress even more insistent. The annual deficit of the Post Office Department has mounted to an appaling total. The Postmaster General says that he cannot raise second, third or fourth class rates. He has already revised upward the price list for international mail and has it in mind to make air mail more nearly pay its keep. Only an advance in the first-class rate will take the department out of the red, according to his figuring. An increase from 2 to 3 cents an ounce would balance the books. But if Congress will not consent—and there is determined opposition on the part of many members—an increase from 2 to 2½ cents per ounce would help the department to meet its increase in expense due to raises of postal salaries, the Saturday holiday, etc.

In forecasting the program of the 72nd Congress, it has been customary in some quarters to couple tariff revision with tax extension. As the meeting date in December approaches, it appears more doubtful whether tariff revision will figure. Certainly the chances are against general revision and there is less than an even chance for piece-meal revision. Organizations of importers continue their propaganda for revision but are admittedly dubious. Just as immigration relaxation is not to be thought of by Congress in a period of extensive unemployment, tariff concessions need not be expected when the Congressional mind is inflamed by fears of the consequences of Soviet "dumping," convict competition, etc.

Waiting on the desk of the 72nd Congress, endorsed by its sponsors as a panacea for business recessions, is a proposal for the revision and modification of the anti-trust laws. It will be urged in behalf of liberalization, that the commodity overproduction and price demoralization which are so heavily contributory to business indigestion in the United States can be cured only if and when business is given freer hands for reasonable cooperation, agreement, and concert of action, in regulation of output. There is no suggestion that the Sherman and Clayton Acts be repealed but merely that these be modified, in accordance with the lessons of actual experience, so as to allow loopholes in the terms "consiparcy," "unfair competition," etc.

Whatever the merits of the cause there is no certainty that anti-trust modification will prevail. The very conditions in business and employment which spell the need for team-play in industry, operate by inverse application, to arouse opposition or suspicion in respect to any plan that seems to confer power for manipulation of prices. This same and Congressional public suspicion that price stabilization is a means for price inflation will operate in the 72nd Congress to strew rocks in the path of the Capper-Kelly Resale Price Fixing Bill, a measure that has been approved by many producers but as vigorously opposed by many retail merchants, notably the department store executives. The chances of resale price fixing in the new Congress were injured by the adverse report to the Federal Trade Commission made public a few months ago. Added to that, is the handicap which comes of the public skepticism regarding all forms of arbitrary price-pegging.

Some of the most interesting contacts which may be established for the dyestuffs industries may be developed from what are characterized as the miscellaneous business numbers on the program of the 72nd Congress. For example, there is the project for a National Peace Industries Board or Industrial Planning Board, destined as a hostage against panics in future. The proposal to substitute the metric system for our present system of weights and measures will again come before Congress at this session. Likewise, the proposal to legalize the 13-month calendar which has privately proven a boon to accounting in the offices of Sears, Roebuck & Company and other firms. Reaction favorable to dyestuffs industries may even be found in the Deceptive Package Bill which is sponsored by the Committee on Agriculture at the request of the U. S. Food and Drug Administration. Well wishers of the color industries predict that if packagers are restrained in their efforts to attract the attention of the public by freakish, exaggerated containers, incapable of holding the content that might be expected from the dimensions, there may well be a common impulse to turn to color as the best means of creating package individuality and display value.

As most of the readers of the REPORTER are aware, an entire section of the business legislative program of the 72nd Congress is to be given over to measures drafted with intent to consolidate, modernize and simplify the Federal facilities for the protection of "industrial property." Perhaps the best chance for favorable consideration is enjoyed by the Trade Mark Revision Bill. If enacted, this would benefit the dyestuffs industries by

granting recognition for trade names that have, by exclusive use, acquired "secondary meaning," and by placing on a parity with technical trade marks the union labels, commerce-marks, service-marks, etc., which have up to this time been incapable of registration.

The provision of better protection for original designs, especially seasonal designs—whether instituted via design copyright, or through a modification of the present strict system of design patent—is one of the tasks to be most insistently urged upon this Congress in behalf of business recovery. General copyright revision is the third of the trinity of projected safeguards for the good will assets of business. The last-mentioned shake-up would be felt in dyestuffs circles because it would transfer from the U. S. Patent Office to the U. S. Copyright Office the machinery for copyrighting labels used on manufactured articles, and "prints" used in association with articles of manufacture. In the same general category, but not so far advanced in Congressional favor, is a proposition to create a new species of patents to be devoted to machine designs. A number of national trade associations have banded together to urge upon this Congress the creation of a special court of patent appeals which would serve as the sole court of last resort for all patent and trade mark cases whatever be their origin.

Nothing that the color industries have at stake in the 72nd Congress is of deeper significance for the future progress of the industry than the policy to be pursued in respect to departmental programs of chemical and textile research. As our readers know, Congress votes each year the funds necessary to defray the operating expenses of the Government for the ensuing fiscal year. This year the President has laid upon Congress a demand for cut-to-the-bone economies in all quarters. The estimates approved by the Bureau of the Budget have been edited with that end in view. As such a time, technical research work in behalf of industry is always in especial peril because there is always a minority in Congress that is unconvinced, or only half convinced, of the wisdom of large expenditures for original research.

There is no fear that Congress will go so far as to abolish research institutions within the Departments or to drop from the service staff chemists and technical specialists. But there is apprehension in well-informed circles that, unless pressure is brought promtply to bear by industry, there may be a disposition to curtail the funds for new research. A check to progress at this stage would be the more serious in that the Government has only these past few years made tangible progress toward its ambition to establish research on a cooperative basis, wherein the operating expense and, to some extent, the maintenance of personnel, would be the joint responsibility, share and share alike, of the Government and organized industry. By means of vigorous representations in Congressional Committee it is sometimes possible to insert in appropriation bills research items which have been omitted from the Department estimates or eliminated by the Budget Bureau. In the present situation, however, strong influence will be needed to win Congressional acceptance for research allotments that do not come up with the endorsement of the executive branch.

Cleanliness in The Silk Mill

By **FRED. GROVE-PALMER, A.I.C.**

Because business is not altogether as good as we should like to find it, there is every reason to redouble the vigilance needed to keep the fabrics clean during their passage through every department of the mill.

It will be profitable to look into the many precautions that are or should be taken in various mills in different locations and handling different stages of the processes; from these it is always possible to adapt something to one's own special requirements, and so help towards perfection of output or at least eliminate one form or another of the many worries that beset the silk man at every step he takes.

CLEAN air is one of the first essentials; this is not necessarily pure air; the humidifier sees to that, but the air should be clean in order to prevent some of the soiling that may otherwise occur. In taking consideration of the air, there are two aspects in which it may be regarded; the one is simply the atmosphere; the other is the use of either compressed air or vacuum apparatus for the purpose of cleaning the mill and its machinery.

When a silk mill is located in the open country, free from unpleasant surroundings and well sheltered from prevailing winds that might import dust in dry weather, no special precautions may be needed, but there are many not so happily situated. Neighboring factories, railroad depots, coal dumps, a loose dusty soil in surrounding fields, any of these and other sources of dirt, soot and dust may be close at hand, and require preventive methods.

In a case in mind, the mill was located adjacent to a cement works, not very close it is true, but with nothing intervening to stop the blowing in of quantities of dust when the wind lay in a certain quarter. As the mill was the later comer it was no good lodging complaints and something had to be done: the plan adopted answered very well.

It consisted of fixing fine cotton gauze over all the windows that had to be opened in the summer and fall, and putting inner doors of the same material at the entrances. It was not one of these sound engineering propositions that any one was proud about but it served its purpose very well; the fabric lasted quite a time and was very cheap, and it did keep out the dirt. If the mill had been more up-to-date, something better would have been done but as it was it served.

Three Kinds of Filters

The proper cleansing of the air supply is, of course, far better, and as the majority of mills now have some system of humidification of the air in most of the rooms, the air is cleansed at the source and much of the dirt trouble done away with. The firm which supplies the humidifier can generally recommend the best type of filter to use with it; so long as it is efficient, it does not much matter what way it works.

There are three principal classes of filter which may be described as: wet, dry and oily. The names are sufficiently graphic and but few words will be necessary to mention their essential points.

The wet filters have an arrangement for drawing the air through a fine sieve into a chamber fitted with atomizers into which a mist of water is playing. In a manner similar to that of Nature, each particle of dust or dirt in the air becomes the nucleus for a number of still smaller particles of water; these coalesce to form a drop which falls, just as rain falls, into a tank at the bottom of the mist-chamber.

On leaving here, the now clean air goes through a series of baffles with running water which removes the mist, permitting the damper but clarified air to go into the humidifier where it receives attention according to the needs of the mill.

Dry filters consist of a series of frames covered with a suitable textile fabric through which the air is drawn, leaving the dirt deposited in a layer. An alternative is drawing the air through several funnel shaped bags, or again, it may have to pass through layers of waste.

Brushing Down Needed

In all cases of dry filters, they need brushing down or shaking out to remove the accumulations of dust, and when the air is very dirty, it is generally found expedient to have a second set cleaned ready to go in, thus avoiding any material stoppage of the filtering plant. Cheapness is the outstanding merit of this type of air filter.

The oily class, again, has a series of baffles and grids, but this time they are coated with a thin covering of oil, a heavy mineral oil is often used but any that will not oxidize can be employed. The webs of the baffles are set at an angle of 30 degrees so that the air in passing through may be thrown from one to the other and in this way deposit the dirt. At stated intervals the parts are wiped, cleaned and recoated. To rid the air of any oiliness it is usually passed through a water scrubber of some approved form.

When any of these kinds of filtered air is used in the mill, the plant makes definite periodical air changes with a view to maintaining a set temperature and moisture; as a consequence, there is no need for open windows and therefore the atmosphere inside is kept clean. One plant can supply all but the largest and very scattered mills; this allows of close control and makes for uniformity throughout the different rooms.

Maintaining Cleanliness

Of the different types of air filters mentioned the first is probably more generally used than either of the others; it certainly is more efficient than the dry type, and with the oil class there is a tendency to feel the grease in the air, especially in hot weather.

This may not apply to all makes, and it may be largely imaginary, but the fact remains. The water type costs little for running and maintenance; it is self-cleaning, and it leaves the air in a good condition for treatment.

Getting clean air into the mill, however, is not the end of the story; it must be kept clean otherwise little good has been done except the preventing of blacks from falling onto the cloth, which might not always occur. The running of the yarns through the various machines gives rise to comparatively large quantities of lint, fly, fliers, fluff or flue; it has many different names in various parts.

Reducing Excess Lint

All textile fibers give rise to this lint, silk is by no means the worst of them, but the value of the fabrics is such that when the price of top grade broadsilks is compared with that of second quality caused by plugs of lint getting woven in, it is evident that it must be kept out at all hazards. It is not possible to prevent its formation altogether though by suitable treatment, to be alluded to later, an excess of lint can be reduced.

The chief necessity is to remove the lint that is formed before it shall have accumulated to such an extent that it is apt to be caught up and either twisted into the yarn or woven into the broadsilk on the loom. One method of effecting the removal is the popular brush and pick, but it is far better to employ air for the purpose, compressed and as a vacuum, the one complementary to the other.

So much of the machinery is very complicated, and there are all manner of "ungetatable" ledges and crannies where fluff can concentrate but where neither brush nor wire pick can reach easily. When these have gotten filled up the mass falls out and does the damage. But a jet of compressed air will remove any such ball of lint instantaneously, as well as all the lighter accumulations. The air jet not only saves considerably on the time required for cleaning the machine but it does it far better and, moreover, it can be done while the machine is running without any risk of hurting the worker.

Cleaning instead of being a troublesome job that is scamped over whenever possible, becomes a pleasure when all that is needed is to hold a jet of air just as if one were hosing down an auto with water. Properly cleaned machines become the rule; the gang boss has no longer to go around grumbling about dirt, and he finds his output is

up considerably because little time is wasted over stopping to clean down.

Fire Risk Lessened

In some mills there are gatherings of fluff in the drying machines and on the stenters; the air jet does this work of cleaning very quickly. It is the same in the warping room where the reeds and harness can be rapidly freed by a whiff of compressed air.

Another point that is worth attention more especially in mills handling fibers other than silk is the lessening of the fire risk. Where there are big aggregations of dry fluff there is always a fire danger; it is extremely inflammable. For example, the motors driving the machines are probably enclosed in wire screens to keep the dust out; this gradually accumulates on the surface and checks the circulation of air causing the motor to run hot, then to short and finally to set fire to the adherent fly. Such a fire may spread with lightning rapidity and cause much damage before the extinquishing squad can get it under. One such that we had in quite a small part of a cotton mill, though it was limited to one machine-room, took us full three days, working right through without a break, to get straightened up and running again. Had we been using compressed air cleaning then, as we did later, it would not have happened, for just a waft is enough to blow away all such gatherings.

If a weaver is supplied with a well constructed airjet, a loom can be thoroughly cleaned down in a couple of minutes while it may take anything up to twenty with the old fashioned brush and wire. Furthermore, it can be done several times a week because the operatives enjoy using the jet. One of the best forms of nozzles for the purpose is around ten inches in length and has a fine point. Working with air compressed to 30 lbs. per square inch it uses close on 7½ cubic feet per minute. Such nozzles should be fitted with deadman grip valves which will only function so long as the worker has a tight hold on it; the moment it is dropped or let go, it shuts off and so prevents any wastage of air.

Effective Pressure

Mention has been made of air at 30 lbs. pressure; this has been found more effective than anything greater, and when the supply is normally above that, it is as well to insert a reducing valve in the cleaning pipeline.

When this method of pneumatic cleaning was first mooted, objections were raised on the score of causing the lint to fly around the room and making conditions worse than they were before; but this does not happen when the airjet is directed downwards in exactly the same way as a water jet would be. The workpeople soon learn what to do.

Silk fluff is comparatively heavy because of the oil that has been used to lubricate the fiber or yarn through the machines; this helps to make it drop to the floor when directed there by the current of high pressure air. Once it is on the floor it is driven into a corner to be sucked up by the vacuum cleaner. The sinking of the flue is assured by the insertion of a cooler in the cleaning pipeline; in thus reducing the temperature of the compressed air below that of the room atmosphere, the lint sinks without trouble. A further advantage of the cooler is that it completely removes all traces of oil and moisture from the compressed air, thus preventing damage to cloth or rusting of the machine.

Suitable Hoses

The matter of suitable hoses has received much consideration. Ordinary garden hose and armoured hose were both vetoed by the suppliers of the plant, the first because it very quickly wore out, and the second because its weight made it very unhandy to operate and drag around in between the looms.

A lightweight hose externally covered with a stout fabric has been found most effective; it need not be of greater diameter than ⅝ inch, half-inch will do quite well. It should not have a greater run than fifty feet or the weight will be a nuisance and it will always be getting caught up. This type of hose is very lasting and when the cotton fabric has at last worn through, there is still the rubber itself to work on for a further period.

A useful suggestion was to put in a short length of around a yard at the end next to the nozzle, right where the greatest part of the wear comes; this can be cut from a worn hose and coupled in, being replaced with another length as occasion demands. The couplings should be especially adapted for compressed air lines; ordinary water hose couplings will generally leak.

Another hint that will help to prevent waste of air is to have the valves on the supply line operated by a key that is chained to the hose so that the worker has to couple on before he can turn on the air. It is practically impossible to uncouple until the air has been shut off.

The installation of a pneumatic cleaning system does not cost very much, and where there is already a humidifying plant it is still less. The economies in time and labor are considerable and soon pay for the expenditure.

It was mentioned above that though the formation of lint by friction could not be prevented entirely, it can be reduced by paying greater attention to the lubrication of the fiber. The man in charge of these sections of the mill will naturally be on the look for any increase; in any case the operatives will report it quickly enough as it is always a nuisance.

When fluff shows signs of accumulating more rapidly than usual in the throwing department, it will be well to overhaul the soaking baths which may, for some reason be going short on oil. It may be that the consignment of silk is freer from gumtacks than usual, and, in consequence, the soaking is reduced. This reduction, however, might easily prove to be something of a mistake from the point of view of smooth running of the fiber. Such a point would need correction. The use of sulphonated oil, or more of it, might seem to be in-

dicated, but at the same time the fact should not be lost sight of that too much of this may lead to the opening up of the fiber and so cause other troubles.

The whole subject of silk soaking is very important and very involved; it cannot be dealt with thoroughly here, but sufficient has been said to show that the prevention of fluff and the keeping of broadsilks free from damages may lie in that section of the mill.

In much the same way, accumulations of fluff on the looms probably arise from lack of lubricant in 'sizing' the warps causing too much friction in the dents of the reed and in the heddles. Steps should be taken to avoid this. At the same time, the reeds themselves should be given the once-over as the edges may have worn sharp or there may be a small breakage here and there. This is especially important in the case of a fine, closely woven fabric, where such defects will show very clearly and will be proportionately more costly.

Danger of Lubrication

While extra lubrication of the yarn may help towards better work, too much lubrication of the machinery is just as apt to give rise to blemishes. This side of the subject should be carefully studied by the engineers. Grease cups that overflow, bearings that leak, spindle baths that splash, these are but a few of the faulty mechanical devices that are apt to spatter black oil all around like a mud dredger.

One may on occasion have a glimpse of a leaking bearing that is screened with a sheet of millboard, tinplate or some such measure, used temporarily in the 'Gay Nineties' and still going on; such makeshifts are always a source of danger and should be replaced with something that is a real engineering job, a new and improved form of bearing, for instance.

In a tour of inspection around factories there are noted unlimited cases where money, time and temper should easily be saved by making a small expenditure on a better system of lubrication. Quite one of the best of these is the gravity-fed totally enclosed type of bearing; it will be found suited to practically all normal locations.

Briefly, the system is keeping the oil supply in an overhead tank, placed above the highest bearing; from this run a series of supply pipes and branches to each bearing, the oil running gravitationally. It goes right through the bearing, doing its work in passing, and runs down another pipe into a quick action filter which strains out any dirt it may have picked up.

From this it flows into a sump and there is taken by a pump to be thrown back into the top storage tank once more. No chance of oil being thrown out, little or no wastage; indeed those who have installed the system have repeatedly expressed surprise and pleasure at the economy in oil.

The lubricant is continually kept clean and hot bearings become almost an unknown event. It is evidently far better than the old style method of letting loose an oiler to do his worst with a can. When an oiler is employed, however, he should be seriously and frequently instructed to be careful, and he should be enjoined to give notice, in writing, of any defective bearings he may notice in the course of his rounds.

Another point, with regards to drip cups or trays: These should be easily accessible and removable without difficulty for the purpose of emptying. Far too often, the presence of a quantity of black grease on a truck load of cloth is the automatic signal that the drip can requires attention. Only those who have tried fully realize the work there is in getting black oil out of silk.

Must Be Accessible

Neglect of the simple and obvious precaution of covering up all silk not in immediate use with a stout cloth has led to many blemishes; the supervisor will be well advised to drop a heavy hand on any one guilty of this crime. There is no excuse for it. Touching goods with dirty hands may cause marks; the hands of the operatives themselves are usually clean enough; it is a part of their routine to keep them so, but people who stray in may not appreciate the full importance of it.

When the engineers arrive to do a repair job, they should not be allowed to shift any silk themselves but should ask for one of the regular folk to do it. One can recall seeing half a dozen pieces of chiffon that looked like plumduff when a fitter had moved them out of his road to refix a small belt; the damage amounted to as many dollars as the job cost cents.

Although a considerable part of the foregoing discussion is in connection with damages that may arise only on the manufacturing side of silk production, the latter part concerning the lubrication of bearings and machine parts applies to every section that has a turning wheel. When the fabric goes into the degumming department, the bleachery, the tin-weighting house, the dyehouse, the drying and tentering, the finishing—anywhere, it is open to blemish from dirt, and especially dirt from bearings. For that reason, it is up to everybody all along the line to see to it that precautions are taken all the time and every time.

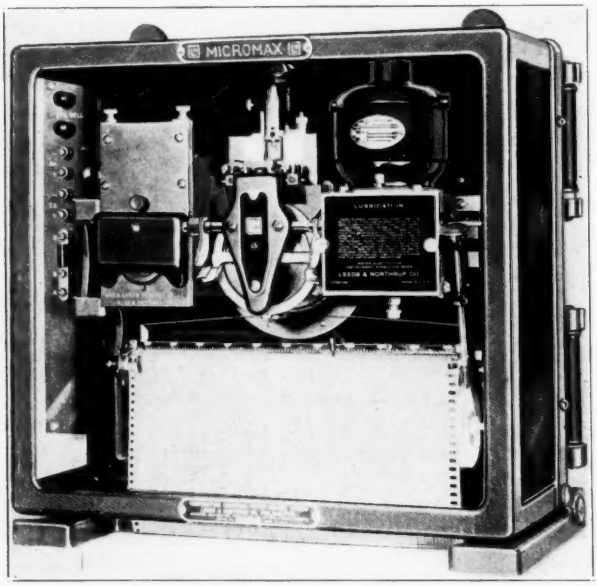
NEW DEVELOPMENTS

Micromax—a New Potentiometer Pyrometer

The improved L & N Potentiometer Pyrometer, Micromax, which was announced in September by the Leeds & Northrup Company of Philadelphia, is an instrument claimed to be worthy of investigation on the part of pyrometer users who appreciate pyrometer reliability.

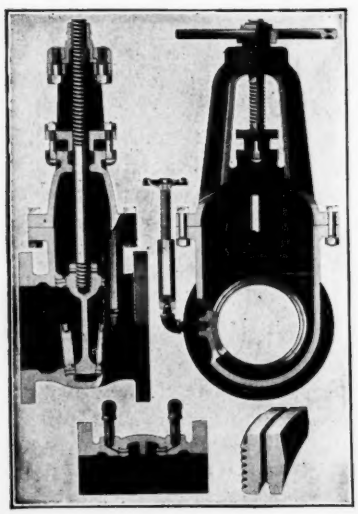
In Micromax, the potentiometer pyrometer is said to be raised to a new high level of accuracy, reliability and strictly automatic operation. Other advantages claimed are as follows: This improved instrument requires no manual adjustments. It needs no daily attention. It eliminates the "human element" in potentiometer pyrometer operation. The instrument circuit is standardized automatically, every 45 minutes or less, giving a closer adjustment than is obtained manually. And manual adjustment of the stepping action is no longer necessary.

Micromax is, in every detail, a fully automatic potentiometer pyrometer. By virute of its microscopically sensitive balancing device, Micromax can detect and record deflections of the galvanometer pointer amounting to



1/1000th of an inch. Micrometer sensitivity makes the recorder action responsive and speedy, sending the pen, or print wheel, across the chart paper in steps that are much more accurately proportionate to the temperature change. If necessary, the recording pen, or print wheel, can step across the entire chart in less than 22 seconds, the size of each step being closely related to the extent of galvanometer pointer deflection. Notice has been received from the Leeds & Northrup Company that all models of Micromax have been in full production for several weeks.

Lubrotite



The Lubrotite Gate Valve, because of its lubricant-seal principle of tight seating, is said to be an ideal valve for general industrial uses. In this valve there is a unique duct system for introducing a lubricant-seal between the seating surfaces. The valve is sealed tight even though the seating surfaces have become damaged by scratches, deposits, or corrosion in the line.

It is recommended by the manufacturer for boiler feed water lines, boiler blow-off, water systems, chemical lines, paper mill service, and other services requiring an absolutely dependable valve.

Full details concerning the Lubrotite Valve can be obtained by writing to the Reading-Pratt & Cady Company, Inc., Bridgeport, Connecticut.

Sulphur Colors Largest Japanese Dye in 1930

According to the Japanese Coal Tar Chemical Industry Association, the 1930 Japanese output of dyestuffs was as follows: Basis colors, 257,633 kilos; direct colors, 609,363; acid colors, 239,627; acid mordants, 41,568; mordant colors, 20,783; sulphur colors, 6,472,947; vat colors, 94,452; dyestuffs soluble in oil, artificial indigo excluded, 43,993.

The rate for "Position Wanted" advertisements in this column is 2 cents a word—with a minimum of 50 cents per insertion. For all other types of advertisements—i.e., help wanted, machinery or supplies for sale—the rate is $5.00 per column inch or less per insertion.

POSITION WANTED

DYER—Six years' experience at bleaching and dyeing wool, cotton, jute and union raw stocks and yarns. Thoroughly experienced in all stages of carpet manufacture. Age, 26; married. Address: Classified Box No. 692, American Dyestuff Reporter, 440 Fourth Ave., New York, N. Y.

POSITION WANTED

Junior textile chemist, college man, laboratory and mill experience in knit and skein rayon, full fashioned hosiery, and cotton and wool dyeing. Address Box No. 702, American Dyestuff Reporter, 440 Fourth Avenue, New York City.

SUPERINTENDENT DYER

Twenty-five years' practical experience in actual processing and dyeing silks, rayon, cotton and all mixtures. Reels, pads and jigs. Good reputation for close matching and economy in dyestuffs. Have had charge of three large dye-houses, covering prints and plain dyes. Would like to connect with a reliable firm, New Jersey or New York preferred. Box No. 703, American Dyestuff Reporter, 440 Fourth Avenue, New York City.

CENTRAL EUROPE

Responsible Party (Active Member AATCC) planning three or four months' trip to Central Europe will consider making investigations, securing business connections or doing similar work for part of expenses. Address Box No. 704, American Dyestuff Reporter, 440 Fourth Avenue, New York, N. Y.